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A Clinical Lecture
ON
EMERGENCIES IN OPHTHALMIC PRACTICE.

Delivered at the Glasgow Ophthalmic Institution on Nov. 29th, 1904,

BY A. MAITLAND RAMSAY, M.D. GLASG., F.F.P.S. GLASG.,
SURGEON TO THE OPHTHALMIC INSTITUTION, GLASGOW ROYAL INFIRMARY.

GENTLEMEN,—The necessity for acting with promptness and decision in a case of emergency affords the best opportunity to test the power and resourcefulness of any man, and what is true of all is specially true of a medical man. At any hour of the night or day he may be summoned unexpectedly to attend an urgent case. Everyone in practice must remember with what trepidation he used to respond to such calls and how anxiously he wondered what the illness might be and what he would be able to do for the patient. After a time the exigencies of general practice make the medical man accustomed to such sudden demands upon his powers. He learns to wait and to see and in all circumstances he trusts to his experience for guidance; but even an experienced practitioner may feel anxious when he is called in haste to attend to some critical condition in connexion with the eye. When he arrives at the house the patient may be in great agony and both he and his relatives all much excited lest blindness or impaired vision is to be the result of the accident. Unless the medical man keep cool and collected, know well what he is about, and is possessed of a fair measure of common sense, he is prone to become infected by the atmosphere of nervousness around and to err in being either too optimistic or too pessimistic. In the former case, knowing nothing of the conditions, he may assure the patient that all will be right in a day or two and may thereby arouse hopes that can never be fulfilled. On the other hand, by being too pessimistic, he may, with equal ignorance of the case but perhaps more regard for his own reputation, occasion much needless suffering by giving a grave prognosis when, with fuller knowledge, he might have been able to do much to relieve the patient's sufferings and to quiet the alarm of all concerned.

Unguarded expressions of medical opinion are always to be deprecated and can be avoided only when a case is approached with full professional knowledge and with the care that comes of deliberate consideration, for it must be admitted that want of care is just as common a cause of mistakes in practice as is want of knowledge. If a general practitioner does not feel confident in his own ability to make a thorough diagnosis he ought to have no hesitation in expressing a wish for aid by consultation; and when he is in doubt he ought never to accept the responsibility of advising the patient to wait for a few days on the chance that the difficulty will pass over. An opinion begotten of hope rather than based on experience is always baneful, for it lulls a patient into a false sense of security and does irremediable harm by allowing time to be wasted which fuller knowledge and larger experience might have used to effect a cure.

As it is to the family medical adviser that patients as a rule appeal in the first instance for aid, and as the fate of a damaged eye depends in most instances on the treatment first adopted, I propose in this lecture to try to offer some guidance as to the best methods of dealing with the commoner emergencies in ophthalmic practice. It is, of course, impossible to refer to every form of accident that may occur, for to do so would require a complete course of lectures on diseases and injuries of the eye. Personal experience, however, even though it be limited, is always of value and so I shall try to present in a connected form notes of some cases of emergency that have occurred in my own practice. Before I do so, however, let me urge one important point. In the country emergencies are much more difficult to cope with than in towns because it is often impossible immediately to obtain many things that are absolutely necessary. Every country practitioner should, therefore, for the instant demands of ophthalmic cases, always carry with him an emergency supply and for this purpose a pocket set of ophthalmic discs will be found convenient.

When a wound implicates the margin of the eyelid the surgeon must be very careful to bring the edges accurately together with a suture, for if he neglects to do so it is likely that one or more cilia may become inverted and, scratching the cornea with every movement of the lids, prove a constant source of discomfort. If the injury be situated at the inner canthus there is a grave risk that the tear passages will be wounded and unless the condition be at once recognised and a road for the escape of the tears opened up complete obstruction will take place in the process of cicatrisation and the patient will suffer from persistent watery eye. These precautions appear obvious but they are often neglected, and what might have been a very trivial injury becomes through inefficient treatment at the outset a cause of great trouble and annoyance. Some time ago, for instance, I was consulted by a gentleman whose carriage had come into collision with an electric car and who had in consequence received from a piece of broken glass a slight wound at the inner canthus of the right eye. He was at once attended to by a medical man who applied a dressing to the injured part and in a couple of days healing was complete. The patient then, however, began to complain of watery eye, and more careful examination showed that the cut, tiny though it was, had severed the lower canaliculus and that the cicatrix had blocked the duct. There was a complete stricture and only after much difficulty was this overcome and the patency of the tear passages restored. Had the true nature of the condition been recognised at the time of the accident and the canaliculus slit up to the lacrymal sac the damage might have been repaired with the greatest ease.

It is a very common thing for the eyelids to be extensively lacerated by the fragments of a burst bottle or by the violence used in the course of an assault, and in all such injuries the surgeon ought to make it his first care to be sure that the globe itself is not implicated, for unless this be done the really serious part of the accident may be overlooked. That actually happened in the case of a man whom I saw in consultation some time ago. He was about to pull the cork from a bottle of soda-water when the bottle burst and the broken glass cut the left upper and lower eyelids very severely. He was at once attended by the family medical adviser and by another medical man who was called in the emergency. The wounds in the lids were carefully sutured and it was not discovered until a week later that there was a cut in the globe at its outer aspect behind the ciliary region. As the eyeball had by this time become infected all attempts to save it were unsuccessful; but had a thorough diagnosis been made at the time of the accident and had the medical men treated the ocular wound as skilfully as they did those of the lids the probability is that the eye would have been saved. In such circumstances it is often very difficult, on account of the extensive laceration, the swelling, the hæmorrhage, and the pain, to make a satisfactory and sufficient examination, and consequently if the surgeon has any doubt regarding the state of the eyeball he ought to administer an anæsthetic and not rest satisfied until he has obtained a complete view of the globe.

It often happens that, owing to the extreme sensitiveness of the structures implicated, an accident to the eye seems much more serious than it really is. Indeed, the pain and symptoms of distress are often in inverse proportion to the gravity of the injury. Here, again, it is very difficult to make a satisfactory examination, for the pain and intolerance of light set up blepharospasm so intense that it is almost impossible to separate the lids. The accident often occurs in the simplest manner possible. A lady while dressing her hair strikes the cornea with the brush or the curling tongs, a gentleman is lighting a cigar when a spark flies from the head of the match and enters the conjunctival sac, or a nurse is playing with an infant and receives a scratch on the eye from the baby's finger nail. These are only a few examples from many that might be cited. In nearly every case the patient believes that serious damage has been done. He speaks of the pain as agony and is quite unable to open the eyelids. As a rule, however, a few applications of a 2 per cent. solution of cocaine overcome the surface irritability and permit the surgeon to separate the lids and to examine the cornea. A small abrasion is usually detected and if this be treated by an antiseptic lotion, an ointment containing cocaine, and a compress and bandage

healing takes place rapidly. If, however, the breach of surface becomes infected by micro-organisms from the conjunctival sac, the edges of the lids, or the lacrymal passages, suppuration ensues, and what was, to begin with, a very insignificant injury becomes serious and a grave menace to sight. It must never be forgotten that no injury to the eye is so trivial that it can with safety be neglected or so insignificant as not to require the most skilful treatment.

Of all injuries to the conjunctiva none is more disastrous in its results than a burn, especially one due to the action of any chemical irritant, such as quicklime or sulphuric acid. In all cases of this kind the prognosis must be very guarded as the action of the chemical extends far beyond its point of application, and what seems at first sight only to have caused a greyish haze over a part of the surface of the cornea will probably by the end of a fortnight have brought about the total destruction of that membrane. It may be noted, however, that very severe causes do not always produce proportionately severe results. When molten metal, for instance, gets into the eye it might be expected to cause, and very often does cause, serious structural damage; and yet, on the other hand, there are cases in which the injury is remarkably slight. The explanation is that on the first entrance of the metal the great heat makes the moisture in the eye pass into what physicists call its "spheroidal state" and the spheroids of water, acting as a non-conductor, protect the eye from injury. In all severe burns both ocular and palpebral mucous membranes are destroyed and as the raw surfaces adhere to each other in the process of healing the eyelid becomes firmly fixed to the eyeball. This condition, which is known as symblepharon, will, no matter how much care is taken to prevent it, certainly occur in every case where the retro-tarsal fold of conjunctiva has been destroyed. If it be extensive, it not only interferes with vision but also causes intolerable discomfort from the sense of dragging which it produces. After an eye has been burned the conjunctival sac ought thoroughly to be irrigated with any bland fluid, and afterwards a few drops of cocaine dissolved in castor oil instilled, or preferably a 5 per cent. solution of chloretone in olive oil. An iced compress should be laid over the closed eyelids and the patient put to bed. In order to combat the inflammatory reaction which is sure to follow, the ice-cold compress should be continued for at least 12 hours and saline purgatives administered, while the pain must be subdued by the application of leeches and by the hypodermic injection of morphine in the temple. The use of anodynes has the additional advantage of inducing sleep and soothing the nervous system generally.

After a blow from a cork suddenly expelled from an aerated-water or champagne bottle there are always subconjunctival hæmorrhage and, if the contusion has been severe, more or less dimness of vision. The pupil is, at first, somewhat contracted and does not readily yield to the action of atropine, which may have to be instilled several times before full dilatation is produced. The pupil often expands irregularly, assuming an oval shape before becoming round. Unless the eyeball has received some structural damage the dimness of sight, which is supposed to be due to shock sustained by the retina at the time of the accident, is always transitory and often of very short duration. Intra-ocular hæmorrhage is of frequent occurrence after contusions of the eyeball, even in cases where there is no evidence of rupture of any portion of the uveal tract. The effused blood may appear in either the aqueous or the vitreous chamber; it always interferes with sight and produces a peculiar discolouration of the iris and sometimes patients complain that when they look at a light it seems to be red in colour. The delicate and sensitive tissues of the eye are very intolerant of sharp sudden blows and many eyes have been lost after such an apparently simple injury as that caused by the rebound of a twig of a tree, the flapping of a sail, or a stroke from a whip-lash. Such injuries may be followed by rapid loss of sight and by inflammation so severe and persistent as to terminate in atrophy of the eyeball. It is wise, therefore, always to adopt antiphlogistic treatment from the outset and after instilling atropine to apply leeches to the outer canthus and iced cloths to the closed eyelids, to administer a sharp purge, and to confine the patient to bed. An ophthalmoscopic examination should be made as soon as possible, because structural damage—hæmorrhage from the retinal and choroidal vessels, detachment of the retina, rupture of the iris or choroid, or dislocation of the lens—is not infrequent, and in view of possible legal proceedings in connexion with claims for compensation it is well to know of its existence without unnecessary delay.

Subconjunctival hæmorrhage may sometimes take place spontaneously and as the effused blood is readily seen the state of matters appears much worse than it actually is and always excites much alarm. In children it is not infrequent during an attack of whooping-cough and in adults it occasionally follows coughing, vomiting, or any violent exertion. As a rule, it is of very little significance and disappears completely in about a fortnight. It is always wise, however, before offering any definite opinion, to make an ophthalmoscopic examination, and, in the elderly especially, to take the additional precaution of examining the urine. It occasionally happens that after an accident a patient discovers, for the first time, that the sight of one eye is defective. He naturally attributes this to the injury, although it may be the result of congenital deficiency and may have been present all his life; consequently, the medical attendant must always be fully alive, not only to this possibility, but also to the fact that for the purpose of pecuniary gain the patient may be either exaggerating his symptoms or actually malingering.

When the injury has been so severe as to produce fracture of the bones at the inner side of the orbit, communication is opened up with the frontal and ethmoidal sinuses and air is thereby allowed to escape into the surrounding cellular tissue. This is known as emphysema of the eyelids. It is usually accompanied by epistaxis and the soft swelling is readily distinguished by crackling to the touch and increasing rapidly in size when the patient blows his nose. Here a firmly applied bandage is an essential part of the treatment. Again the bones of the orbit may be fractured without implication of the air sinuses and although externally there may be nothing visible except what is usually called a "black eye," yet the patient may not be able to distinguish light from darkness. In these circumstances it is likely that the optic nerve has been injured and although ophthalmoscopic examination shows at first little abnormal, yet sooner or later it will reveal all the signs of complete atrophy of the optic disc. After such an accident, therefore, the prognosis must always be guarded until sufficient time has elapsed to permit the case to declare itself fully.

The practitioner may, however, be called to attend a case of sudden blindness in which there is no history of injury. Here is an example. A girl, 17 years of age, came home from work apparently in her usual health and without pain or fore-warning of any kind, while she was cutting bread for supper, she experienced a sensation as if a cloud had passed before her right eye and on looking up and closing the left she found that the eye affected was so blind that she was quite unable to distinguish light. A condition like this is in all probability permanent and the result of embolism of the central artery of the retina, so that the medical man must be on his guard not to misinterpret its significance and to confuse it with the transitory blindness which occasionally precedes sick headache or the dim vision which may be premonitory of glaucoma. He ought always to investigate the history of the case carefully, and roughly with his hand to map out the field of vision so as to determine whether the retina is wholly or only partially involved. In that way he may be able to arrive at some notion as to the probable cause of the defective sight—intra-ocular hæmorrhage, retrobulbar neuritis, detachment of the retina, &c.—but before committing himself to any definite opinion he should make a careful study of the results of ophthalmoscopic examination and if he be unable to use the ophthalmoscope himself he ought never to delay in obtaining the assistance of an expert.

In all those cases of sudden blindness to which I have just referred the patient, as a rule, never complains of pain, nor is there any sign of inflammation in the eyes themselves. It is, however, quite otherwise with the condition which I am now about to describe. Here also the onset of the failure of sight is sudden—often alarmingly so—but it is accompanied by agonising pain and intense inflammation. The onset of the symptoms frequently occurs during the night and is accompanied by bilious vomiting and perhaps purging. The danger is that the pronounced symptoms so common as accompaniments of an ordinary bilious attack may deceive the practitioner and draw away his attention from the real seat of trouble—the eyes. The patient himself may add to the misapprehension, for he naturally connects the pain in the head with the vomiting and attributes the failure of sight

to the biliousness. In such a case one point is worthy of special notice, as it is always most helpful in the diagnosis. If the patient be questioned and should describe the eyeballs as feeling swollen almost to bursting and too large for the sockets, it is well to consider at once whether or not the case is one of acute glaucoma. The medical man should therefore take immediate warning and palpate the globes to ascertain the state of the intra-ocular tension. Almost invariably the eyes will be found of stony hardness. There will be extreme congestion and œdema of the ocular conjunctiva, the pupil will be dilated, and the anterior chamber shallow. Let him be on his guard also not to misinterpret the significance of this form of ocular inflammation, for to do so is fatal. The dilated pupil and shallow anterior chamber, associated with the stony hardness of the eyeballs, are unmistakeably characteristic and ought to prevent glaucoma from ever being mistaken for iritis. Unfortunately, however, while that is so, such a mistake is far too common, and as the treatment for the one is exactly the opposite of that for the other the error is a very serious one. Atropine is instilled with the result that the symptoms are aggravated and the patient's chances of recovering sight are materially lessened. Whenever the practitioner satisfies himself that the case is one of glaucoma he ought at once to instil eserine, to put leeches to the temples, and to apply fomentations to the eyes. If in a few hours the pain has not subsided means must be taken to reduce intra-ocular tension by opening the eyeball so as to relieve the strangulation at the corneo-iritic angle. If the practitioner cannot obtain assistance he ought not to wait but should at once puncture the sclerotic with a narrow knife and allow some of the vitreous to escape. If he observes strict antiseptic precautions this can be done without danger and will give relief till the services of a specialist can be obtained. If the increased tension be not lowered impaired sight or even blindness will almost inevitably result but the hopelessness of the condition is at once removed by the performance of iridectomy. The all-important thing is that the case be taken in time.

In every instance that I have cited the ability to make an early and accurate diagnosis is a matter of the first importance. Delay is always dangerous and the patient's chances of a favourable result depend upon prompt and skilful treatment. It is true that an error in diagnosis may sometimes be rectified in time to prevent the patient suffering any serious damage but in acute glaucoma, if sight is to be preserved, surgical interference must take place as soon as possible after the disease has declared itself. Here the damage done by delay is irretrievable and all regrets are vain.

THE X RAY TREATMENT OF LEUKÆMIA.

REPORT OF A CASE, WITH AN ABSTRACT OF THE LITERATURE.

BY J. C. G. LEDINGHAM, M.A., M.B., B.SC. ABERD.,
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IN the *Medical Record* of August 22nd, 1903, there appeared an article by Nicholas Senn entitled "A Case of Splenomedullary Leukæmia successfully treated by the Use of the Röntgen Ray." The notes of this case were briefly as follows. The patient was a married female, aged 29 years, who for a year previous to admission to hospital had experienced sharp pains at varying intervals in the left hypochondriac region. Her abdomen had noticeably increased in size and over the epiphyseal extremities of the long bones and sternum dull aching pains were frequently felt. On admission in January, 1903, the spleen extended nearly to the pubes and two inches beyond the median line on a level with the umbilicus. It was tender on deep pressure. The liver was palpable below the costal arch. The urine amounted to 1200 cubic centimetres; it had a specific gravity 1015 and contained a trace of albumin. Slight cough was present. There were no tubercle bacilli in the sputum. The temperature varied from normal to 100° F., with a slight rise noticeable towards evening. The slightest exertion caused shortness of breath and rapid pulse. Blaud's pills and Fowler's solution were prescribed and continued for three weeks without making any impression. Three weeks after admission the x rays were applied over the spleen, sternum, and epiphyseal extremities of the long bones daily for from ten to 20 minutes. At the commencement of this treatment a blood examination showed: red cells, 3,500,000 per cubic millimetre; white cells (chiefly myelocytes and eosinophiles), 648,000 per cubic millimetre (no differential count recorded). Pronounced poikilocytosis was present. During the course of treatment the use of the x rays had to be suspended for a day or two on several occasions owing to the occurrence of high temperature and other symptoms of intoxication. Three weeks after the commencement of the treatment indications of progressive decrease in size of the splenic tumour were noted. The blood was examined at intervals of a few days and it was noticed that improvements in the condition of the blood kept pace with reduction in the splenic volume. The first decided changes were the gradual disappearance of the myelocytes and eosinophiles and the return of the erythrocytes to their normal shape. On April 12th the blood showed no myelocytes, only a very few eosinophiles, and very little poikilocytosis. The patient left the hospital but returned daily to the out-patient department for x ray treatment. Menstruation returned at regular intervals and the last blood examination showed no abnormalities in structure or in the relative numbers of red corpuscles and leucocytes. Senn attributes the result to prolonged use of the Roentgen rays.

In the *Medical Record* of April 9th, 1904, appeared an article by Bryant and Crane, entitled "Two Cases of Splenomedullary Leukæmia; Treatment and Recovery." The first case was that of a woman, aged 33 years, who was admitted to hospital on Sept. 29th, 1903. On admission the spleen extended two inches to the right of the umbilicus and three inches below it; it filled two-thirds of the abdomen. Examination of the blood gave the following result: red cells, 3,500,000 per cubic millimetre; hæmoglobin, 50 per cent.; and white cells, 176,000 per cubic millimetre. Myelocytes predominated and eosinophiles were increased; poikilocytosis and a few nucleated red cells were present. Fowler's solution and Blaud's pills were prescribed and the x rays were applied over the spleen and the ends of the long bones for ten minutes on every second day. On Oct. 12th the blood count gave the following result: red cells, 4,000,000 per cubic millimetre; hæmoglobin, 60 per cent.; and white cells, 55,700 per cubic millimetre. Myelocytes were diminished and polynuclear cells predominated. The x ray treatment was suspended from Oct. 12th to 25th owing to its causing nausea, headache, and nervousness, with cardiac palpitation. On Nov. 1st the blood was again examined with the following result: red cells, 5,000,000 per cubic millimetre; white cells, 4500 per cubic millimetre; and hæmoglobin, 60 per cent. The white cells were in normal proportions. Nucleated red cells were absent and the spleen was of normal size. The pain in the long bones had disappeared. On the 16th the blood was normal and the spleen extended a little below the twelfth rib. On the 27th the patient felt quite well. Her appetite was excellent and she felt better than she had done for years.

The second case was that of a male, aged 31 years, who was admitted to hospital on Feb. 16th, 1903. Enlargement of the abdomen had been noticed since 1899. The spleen extended into the pelvis. Examination of the blood gave the following results: red cells, 3,300,000 per cubic millimetre; and white cells, 200,000 per cubic millimetre, chiefly myelocytes. Fowler's solution was given in increasing doses, with bone marrow and iron. On August 1st the splenic tumour was noticed to be disappearing. On Oct. 12th the hæmoglobin was 80 per cent.; the red cells were 5,300,000 per cubic millimetre; and the white cells were 6400 per cubic millimetre. A differential count showed normal proportions. The splenic tumour had entirely disappeared.

Bryant and Crane state that the x ray treatment hastened matters in the first case. The woman had been under treatment but a very few days when there was noticeable diminution in the size of the spleen, followed by a severe

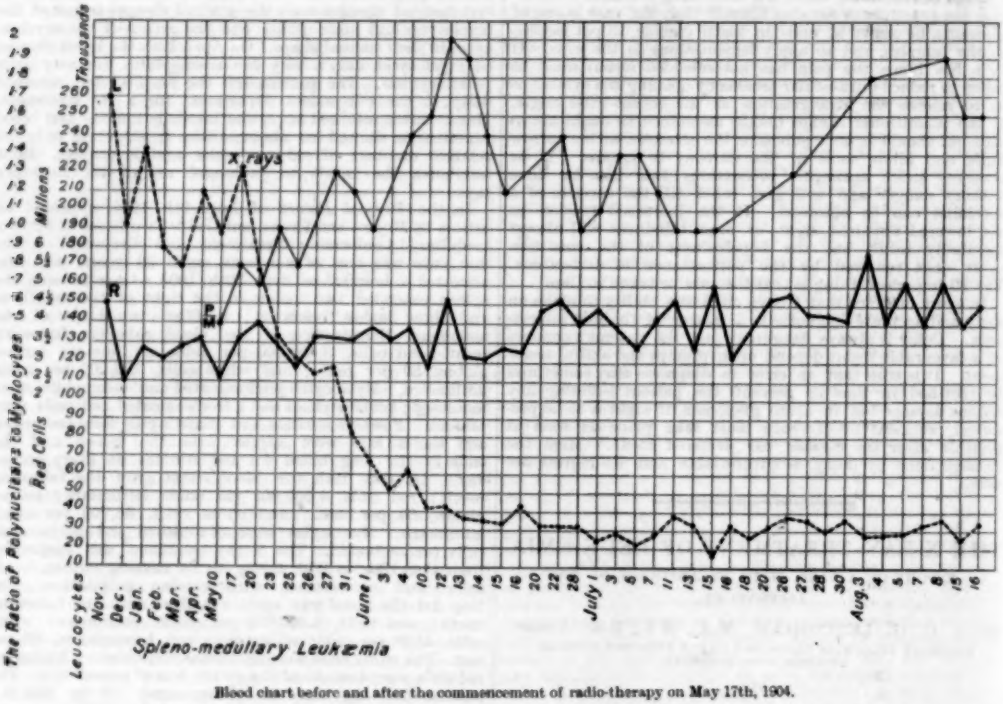
constitutional reaction. The second case (with no x ray treatment) improved slowly with no marked disturbance, but the tumour did not begin to disappear till three or four months after the beginning of the treatment.

A remarkable article by H. Heinecke on the effect of the x rays on the internal organs appeared in the *Münchener Medicinische Wochenschrift* of May 3rd, 1904. He found that small animals exposed to the rays for a number of hours died in from seven to 14 days. The spleen showed an excessive increase in the pigment, disappearance of follicles, and destruction of the splenic pulp. A large number of animals of about the same size were then exposed to the x rays and it was found possible to separate entirely the processes in the follicles from those taking place in other parts of the spleen. The former started a few hours after beginning the radiations and were completed in 24 hours. The nuclei of the lymphocytes in the follicles disintegrated within a few hours and the remnants were taken up by the phagocytes which shortly disappeared from the spleen. This resulted in an almost complete destruction of the follicle. Analogous processes took place in all other lymphoid structures of the body and in the marrow. It was determined that the minimum length of time required to bring about these changes was 15 minutes in rabbits or a moderate-sized dog. Heinecke believes that similar effects take place in man and that the lymphoid structures are affected without there being any marked reaction in the skin. He therefore claims that a therapeutic application may be made of this principle in treating certain diseases of the lymphatic system, leukæmia, pseudo-leukæmia, and lympho-sarcomata. He also refers to cases treated in this way by American surgeons. The results obtained by the authors above quoted in the treatment of leukæmia and by Heinecke in his experiments on animals led us to believe that at any rate x ray treatment was worth a fair trial where other therapeutic measures had failed to make any impression.

In the medical wards of the Royal Hospital for Sick Children, Aberdeen, there happened to be a boy suffering from spleno-medullary leukæmia, with enormous enlargement of the spleen and a characteristic blood picture but whose general condition was otherwise so satisfactory as to render him an eminently suitable subject for treatment by the x rays. The following are brief notes of the case up to the point when x ray treatment was determined upon.

The patient, aged 11 years, was admitted on Nov. 19th, 1902. He was emaciated and weak but did not present any obvious signs of anæmia. There was marked distension of the abdomen, due to an enormous enlargement of the spleen, the lower border of which reached to within a finger's breadth of the pubes, while the anterior border extended two inches beyond the middle line. Examination of the blood showed the characteristic changes of leucocythæmia of the spleno-medullary type—red cells, 3,570,000 per cubic millimetre; white cells, 234,000 per cubic millimetre; and hæmoglobin, 80 per cent. Myelocytes were numerous but no differential count was recorded at this date. For a few days after admission the temperature rose in the evening to from 100° to 101° F. It then became normal, probably as the result of complete rest in bed, and continued so for several weeks. The boy was allowed up; this was at once followed by a return of the pyrexia, the evening temperature reaching from 102° to 103°, and on every subsequent occasion on which he was permitted to get up a similar rise of temperature with deterioration of the general condition was observed. Apart from these elevations of temperature, there were intermittent attacks of pyrexia for which no explanation could be found. The treatment consisted chiefly in rest and dieting. Arsenic in small doses was prescribed but was so badly borne that it had to be discontinued. For the one and a half years in which he was in the wards previously to the commencement of the x ray treatment there was little change in the boy's general condition. The spleen perceptibly increased in size but the blood, though the counts varied considerably, did not show any progressive deterioration.

Treatment with the x rays was begun on May 17th, 1904. During the preceding six months examinations of the blood were made at frequent intervals and it was found that the white cells oscillated round a mean of 200,000 per cubic millimetre, with variations of 40,000 on either side, while the red cells averaged 3,300,000 per cubic millimetre, the ratio of white to red remaining at the fairly constant figure



Blood chart before and after the commencement of radio-therapy on May 17th, 1904.

of 1 to 15. As has been frequently noted in leukæmia the daily variations of the white cells were considerable, amounting in this case to 50,000 on several occasions. But a point to which sufficient attention has not been drawn is the remarkable and unaccountable variation in the number of red cells from day to day; a drop of 500,000 or even 1,000,000 within such a short interval as two days was quite a marked feature, and it is to be noted that treatment of a therapeutic nature could have played no part in bringing about such changes, for no therapeutic treatment of any kind was employed. The hæmoglobin percentage, as ascertained by Haldane's instrument, remained fairly constant, about 55 per cent. A few differential counts are appended showing the condition of the blood in the six months previous to the x ray treatment. On Nov. 7th, 1903, examination of the blood gave the following result: red cells, 4,056,000 per cubic millimetre; white cells, 260,800 per cubic millimetre; myelocytes, 48 per cent.; polymorphonuclears, 39 per cent.; small and large lymphocytes, 8 per cent.; mast cells, 6 per cent.; and nucleated red cells, 4 per 100 white cells. On March 24th, 1904, the blood count was as follows: white cells, 236,800 per cubic millimetre; myelocytes, 56 per cent.; small lymphocytes, 5 per cent.; large lymphocytes, 12 per cent.; polymorphonuclears, 18 per cent.; ordinary eosinophiles, 8·9 per cent.; and normoblasts, 3 per 100 white cells. On May 10th, exactly a week before the commencement of the x ray treatment, a blood examination showed: red cells, 2,560,000 per cubic millimetre; white cells, 188,000 per cubic millimetre; and hæmoglobin, 46 per cent. The ratio of white to red cells was 1 to 13. A differential count of the leucocytes gave the following result: small lymphocytes, 9 per cent.; large lymphocytes, 12 per cent.; large hyaline leucocytes, *nil;* neutrophile myelocytes, 44 per cent.; coarsely granular eosinophile myelocytes, 1 per cent.; finely granular eosinophile myelocytes, 1 per cent.; polymorphonuclears, 22 per cent.; ordinary eosinophiles, *nil;* mast cells, 8 per cent.; and nucleated red cells, 8 per 100 white cells. The ratio of polynuclears to myelocytes was 0·5, the myelocytes predominating largely, as was the case in all the counts made during the previous six months.

Following Senn's method, the x rays were applied over the splenic tumour and the lower epiphyses of the femora. Occasionally also they were applied over the sternum and vertebræ. The exposures lasted from ten to 15 minutes every alternate day, but for a period an exposure was given every day with no bad effects. In fact, throughout the three months of x ray treatment no constitutional effects were noted at all apart from slight prickling sensations lasting for a short time after the applications. There was never any nausea, headache, or rise of temperature traceable to the x ray treatment. In this respect this case differed considerably from Senn's and Bryant and Crane's cases. It must be noted, however, that during the week June 12th to 18th a marked erythema appeared over the splenic area which had been exposed to the rays. (N.B.—The vacuum tube was always fixed at a distance of somewhat over five inches from the area exposed.) The part did not itch, nor did it cause the patient any inconvenience, but it was considered advisable to discontinue the exposure over the splenic area until the erythema had disappeared and the epiphyses only were exposed. In a few days some small dry blisters appeared in the erythematous area and the patch rapidly desquamated, leaving a clean white healthy epidermis. This was the only untoward effect of the x ray treatment and in itself was quite insignificant. It cannot be too strongly insisted, however, that great caution is necessary in exposing to the rays an enlarged spleen in such close proximity to the exterior. Were a burn to intervene the consequences might be disastrous.

During the treatment, careful blood examinations were made either daily or on alternate days and generally immediately after the exposure to the x rays. The accompanying three curves (see chart), indicating the course taken by the white cells, the red cells, and the "polymorphonuclear-myelocyte" ratio, require some explanation. Along the abscissa line are noted the dates on which blood examinations were made. The curves from November to April are composite ones, being obtained by taking the average of all the counts of red and white cells made during the respective months. Through lack of space it is impossible to detail the results of all the differential counts made during the course of the x ray treatment. A few only will be given but the great importance of the ratio of polynuclears to myelocytes and the influence exerted on this ratio by the x ray applications have led us to represent this quotient graphically:—

Leucocyte curve (commencing L.) .....
Erythrocyte ,, (,, R.) ▬▬
Polynuclear : myelocyte ,, (,, P/M) ——

In making the differential counts of the leucocytes the following classification was adopted:—

S.L. = Small lymphocytes (percentage).
L.L. = Large ,, ,,
L.H. = ,, hyaline leucocytes (percentage).
N.M. = Neutrophile myelocytes ,,
C.E.M. = Coarsely granular eosinophile myelocytes (percentage).
F.E.M. = Finely ,, ,, ,, ,,
P. = Polymorphonuclears (percentage).
O.E. = Ordinary eosinophiles ,,
Masts = Mast cells.
N.R. = Nucleated red cells per 100 white cells.
T. = Transitional forms. These cells were mononuclear and contained large irregular burnt-sienna coloured granules scattered very sparsely throughout a highly vacuolated protoplasm. It was often exceedingly difficult to distinguish these from mast cells.

As so many observers have noted, a classification of the leucocytes in leukæmia depends largely on the personal equation. Probably no two observers, however conversant with the extraordinary variety of leucocytes in leukæmia, will adopt exactly the same system of classification. The classification adopted above suited extremely well and the same stains were, as a rule, employed on every occasion. These were eosin and methylene-blue, employed separately after heat fixation. Jenner's and Leishman's stains were also employed on several occasions. The following are the results of the different blood counts:—

May 17th (date of commencement of x ray treatment).

Red cells, 3,696,000 per c.mm.
White cells, 222,000 ,,
S. L., 14 per cent.
L. L., 15 ,,
L. H., 2 ,,
N. M., 26 ,,
C. E. M., 3 ,,
F. E. M., 1 ,,
P., 24 ,,
O. E., 1 ,,
Masts, 10 ,,
N. R., 2
P. : M., 0·8
The ratio of white to red cells was 1 to 16.

June 1st.

Red cells, 3,928,000 per c.mm.
White cells, 68,800 ,,
Hæmoglobin, 44 per cent.
S. L., 10 per cent.
L. L., 12 ,,
L. H., 2 ,,
N. M., 26 ,,
C. E. M., 2 ,,
F. E. M., 2 ,,
P., 31 ,,
O. E., 0 ,,
Masts, 14 ,,
N. R., 9
P. : M., 1·0
The ratio of white to red cells was 1 to 57.

June 22nd.

Red cells, 4,576,000 per c.mm.
White cells, 32,400 ,,
S. L., 8 per cent.
L. L., 4 ,,
L. H., 5 ,,
N. M., 26 ,,
C. E. M., 3 ,,
F. E. M., 0 ,,
P., 42 ,,
O. E., 0 ,,
Masts, 12 ,,
N. R., 1
P. : M., 1·5
The ratio of white to red cells was 1 to 141.

July 15th.

Red cells, 5,008,000 per c.mm.
White cells, 17,800 ,,
S. L., 8 per cent.
L. L., 4 ,,
L. H., 1 ,,
N. M., 33 ,,
C. E. M., 7 ,,
F. E. M., 0 ,,
P., 42 ,,
O. E., 0 ,,
N. R., 3
T., 4 per cent.
P. : M., 1·0
The ratio of white to red cells was 1 to 281.

August 3rd.

Red cells, 5,936,000 per c.mm.
White cells, 26,200 ,,
S. L., 6 per cent.
L. L., 3 ,,
L. H., 0 ,,
N. M., 28 ,,
C. E. M., 4 ,,
F. E. M., 0 ,,
P., 57 ,,
O. E., 0 ,,
N. R., 1
T., 1 per cent.
P. : M., 1·8
The ratio of white to red cells was 1 to 226.

August 16th.

Red cells, 4,560,000 per c.mm.
White cells, 34,600 ,,
S. L., 5 per cent.
L. L., 7 ,,
L. H., 2 ,,
N. M., 27 ,,
C. E. M., 4 ,,
F. E. M., 0 ,,
P., 51 ,,
O. E., 0 ,,
Masts, ,,
N. R., 3
T., 2 per cent.
P. : M., 1·6
The ratio of white to red cells was 1 to 131.

A consideration of the curves will show that the leucocyte count came gradually down from 222,000 per cubic millimetre on the first day of treatment to 23,000 on July 5th—i.e., in the space of six weeks. After this date till the middle of August, when the x ray treatment was discontinued to permit of the patient's going to the convalescent home, the leucocyte count oscillated round a mean of 30,000. On one occasion it dropped to 17,800 but never lower. Thus the reaction to the x rays in our case differed somewhat from that in Bryant and Crane's first case and in Senn's case, in which the leucocytes dropped to normal. From August 17th onwards the leucocytes showed a slight tendency to increase and it was determined to renew the x ray treatment on the boy's return to hospital. The red blood cells during the period of treatment showed the same extraordinary variations which were noted before the commencement of treatment, but the average was much higher. During June, July, and August the mean was about 4,500,000 per cubic millimetre and on several occasions counts of over 5,000,000 were recorded. The hæmoglobin appeared to remain fairly stationary at from 55 to 60 per cent. Regarding the differential counts it will be seen from the curves and the detailed records that as the total of leucocytes diminished the myelocytes, which had previously been the predominating cells, now began to take the second place, the polymorphonuclears taking first place, and the ratio of polynuclears to myelocytes rose from 0·5 before the x ray treatment to 2. The myelocytes, however, showed no tendency to disappear altogether and the blood did not return to normal proportions, as was noted in Senn's and Bryant and Crane's cases.

The effect of the x rays on the blood in leukæmia is, however, exceedingly interesting. In fact, the x rays appear to act exactly as an intercurrent affection does on the leukæmic blood picture. A very systematic description is given of the influence of complicating diseases on leukæmia by Dock.[1] Thus in a case of leukæmia in which influenza intervened the white cells came down from 367,070 to 7500 per cubic millimetre, the myelocytes from 48 to 11 per cent., while the polynuclears rose from 41 to 60 per cent. Dock also notes in several cases a rise in the red cells simultaneously with a fall in the white. In our case this fact was specially noticeable. Further, the counts of nucleated red cells deserve mention. Dock observed that during the low leucocyte stage following an intercurrent affection the nucleated red cells rose to a high level. Our tables for the month of June show that these cells likewise increased largely as the leucocytes fell. During July and August, however, the percentage dropped to a lower level, while the leucocytes remained more or less stationary. During the rapid fall of leucocytes from the middle of May to the middle of June the percentage of mast cells rose to the high level of 16. After this they slowly declined to an average percentage of 3. The lymphocytes did not show any great variation in the total percentage of the three varieties, remaining about an average of 18.

In regard to these interesting blood changes, however, it must never be lost sight of that arsenical treatment may produce similar changes. Thus an extraordinary case was recorded by Simon and Campbell.[2] The patient was a woman, aged 35 years, with enlarged spleen and typical leukæmic blood picture. With large doses of Fowler's solution the leucocytes dropped from 350,000 to 4000 per cubic millimetre in May, 1903. Since that time they have remained within normal limits. The spleen has also diminished, so as now to be barely palpable. Simon and Campbell say that it is the only case on record in which both the splenomegaly and the myelæmia have disappeared and improvement persisted uninterruptedly for a year. In discussing this case Osler remarked that he had three cases in which the leucocytes disappeared entirely in leukæmia. In two of his cases the splenic tumour did not disappear but remained large, while the leucocytes fell to normal. He attributes these effects to long-continued treatment with arsenic in full doses.

We have noted the changes in the myelæmic blood picture produced by the x rays. It remains for us to describe the most remarkable effects the treatment has had on the general condition of the patient and on the splenic tumour. Previously to this treatment the patient was more or less bedridden, owing to the invariable rises of temperature that the mere getting out of bed and lying on a couch produced. Further, walking was always difficult and breathlessness with face-flushings exceedingly troublesome. However, within a month after the commencement of treatment the patient felt distinctly better and was able to walk down to the Roentgen ray room and after exposure to climb the stairs leading to the ward. In fact, the boy walked with the greatest ease and without any bad effect or even rise of temperature.

The following were the abdominal measurements at the commencement of the x ray treatment. Maximum girth (at a level four inches above the umbilicus) was 32½ inches, the girth at the level of the great notch (two inches above the umbilicus) was 32 inches, and the girth at the umbilicus was 29½ inches. At the level of the umbilicus the spleen extended two and three-quarter inches to the right of the middle line. At the level of the lower pole of the spleen in the right iliac fossa it extended four and three-quarter inches to the right of the middle line. On May 24th the girths at the same levels were respectively 32, 31, and 28 inches. On August 1st they were respectively 29½, 29, and 27½ inches. On Sept. 24th they were respectively 30, 26½, and 26 inches. From the middle of August to Nov. 1st the patient remained in the convalescent home and no x ray applications were made. During this period several blood examinations were recorded, for which we are indebted to Mr. James Adams. These showed a slight tendency to increase on the part of the leucocytes, the average being about 45,000 per cubic millimetre, the red cells, also sensibly diminished, averaging 3,600,000 per cubic millimetre. The ratio of polynuclears to myelocytes, however, remained high, with an average of 1·3. During his stay in the convalescent home the patient enjoyed excellent health and on his return to hospital on Nov. 1st his general condition was exceedingly satisfactory. Regarding the patient's weight at different periods it may be noted that on May 9th the weight recorded was 4 stones 6 pounds; on June 6th it was 4 stones 6 pounds 12 ounces; on July 18th 4 stones six pounds six ounces; on August 15th 4 stones 6 pounds; on Nov. 2nd 4 stones 13 pounds 5 ounces; and on Nov. 21st 5 stones 1 pound 8 ounces. The abdominal girths taken at the above levels on Nov. 23rd were respectively 31½, 30, and 29 inches. It will thus be seen that the effect of the x rays on the splenic volume has been on the whole slight. Very shortly after the commencement of the x ray treatment, however, it was noted that the splenic tumour was markedly softer on palpation and at the present moment it is undoubtedly smaller than it was when the patient left hospital, in spite of the fact that the abdominal girths show only a slight reduction. Possibly the fibrosis which we know to occur in the late stages of the leukæmic spleen will not permit of any great diminution in the splenic volume in our case.

The results of the x ray treatment in the case of our patient have been indeed surprising and it is interesting to compare them with those recorded during the past few months by German, French, and American observers. We have already referred to Senn's and Bryant and Crane's papers on the subject at the commencement of this article, as it was the results gained by these workers which instigated the adoption of x ray treatment in our case. It appears that Pusey[3] was the first to adopt the treatment of leukæmia by the x rays. In one case of the splenomyelogenous type he observed no effect, but in one of lymphatic leukæmia there was a very marked diminution in the glandular and splenic tumour with no noticeable fall in the leucocytes. Recurrence unfortunately took place and finally death ensued. Grad[4] reports improvements in a case diagnosed as leukæmia by x ray treatment. This case, however, loses much of its value from the fact that no results of blood examinations are given. Brown[5] gives notes of a case of myelogenous leukæmia symptomatically cured by the x rays. At the commencement of treatment the red cells numbered 2,600,000 per cubic millimetre, white 800,000 per cubic millimetre, polynuclears 40 per cent., myelocytes 40 per cent., eosinophiles 8 per cent., and hæmoglobin 65 per cent. During the first two months iron and arsenic were also administered. These were then discontinued and the x rays alone were employed. After seven and a half months' treatment the leucocytes had fallen to 7894 per cubic millimetre and the red cells had

[1] American Journal of the Medical Sciences, April, 1904.
[2] Johns Hopkins Hospital Bulletin, May, 1903.
[3] Journal of the American Medical Association, April 12th, 1902.
[4] Journal Adv. Therapeut., January, 1904, p. 30.
[5] Journal of the American Medical Association, March 26th, 1904.

risen to 4,690,000 per cubic millimetre, while the hæmoglobin was 95 per cent. The polynuclears were now at a percentage of 74 and the myelocytes had fallen to 20 per cent. A slight dermatitis appeared once or twice over the exposed splenic area but no bad results ensued. Grosh and Stone[6] report a case of leukæmia on which the x rays were tried after a nine months' course of arsenic and mercury. The patient, a male, aged 44 years, was admitted in June, 1903. The blood count gave the following result: red cells, 2,100,000 per cubic millimetre; white cells, 960,000 per cubic millimetre; myelocytes numerous. Very detailed accounts are given of the blood picture during these nine months. It appeared that the myelocytes increased as the disease became more chronic. Treatment by the x rays was begun on Feb. 24th, but a mixture containing iron, arsenic, and mercury was continued. After 20 sittings the leucocytes had fallen from 252,000 to 10,600 per cubic millimetre and the myelocytes from 52 per cent. to 2 per cent. The spleen was smaller and the general condition was fair. Owing to the development of some superficial burns on the abdomen and the elbow the x ray treatment was discontinued on March 20th. Unfortunately, however, although, as Grosh and Stone remark, the burns were healing nicely, the patient began suddenly to fail in strength and died from general asthenia. At the necropsy the spleen was found to be in a condition of chronic hyperplasia with fibrosis, and in the authors' opinion x ray treatment could have had little effect on a spleen in this late stage.

Krone[7] records a case of splenic leukæmia which he treated with the x rays. The patient was an adult male. At the commencement of treatment the ratio of white cells to red cells was 1 to 8. This fell after a short time to 1 to 20 and the spleen became softer and smaller. The girth also diminished though the body-weight rose slightly. There was great improvement in the general condition but naturally the patient could not be regarded as cured.

Ahrens[8] records a very interesting case in which the ratio of white to red cells was 1 to 1 and the splenic tumour was twice the size of a man's head. The patient was a male, aged 27 years. After 20 sittings there resulted a great improvement in the general condition of the patient who was now able to take long walks. After 35 sittings the spleen was just felt below the left rib margin and after the fiftieth sitting it was scarcely palpable. The ratio of white to red cells had also fallen to 1 to 525. The case was thus apparently cured and the patient was advised to lead a quiet life and to report himself at intervals. A count made at the end of one month showed no notable changes but a few weeks afterwards a remarkable relapse occurred, the patient having indiscreetly over-exerted himself and thereby caught a chill. The spleen was now found to extend again to the ileo-cæcal region and the leucocytes had increased 20-fold. The x rays were again applied and the spleen became a little smaller but the blood was not markedly influenced. High fever and sweating intervened, ending in death. A necropsy revealed a splenic tumour weighing six and a half pounds (German weight) with numerous infarcts. In discussing the case Ahrens believes that during the treatment the x rays had rendered innocuous the exciting pathological factor and that on the cessation of the treatment it had once more gained entrance from the exterior or revived in the interior of the body organism, producing similar anatomical and functional changes.

Aubertin and Beaujard[9] record in one case of myelogenous leukæmia in a male patient, 60 years of age, with enlargement of the spleen and the liver, a considerable rise in the leucocyte count after each application of the x rays. It remained high for 24 hours and then fell below the original level. The red cells showed no diminution and occasionally there was an increase immediately after the sitting. The diminution in the size of the spleen and the liver was trifling but the general condition of the patient was much improved.

Guilloz and Spillmann[10] record a case of splenic leukæmia in a woman, aged 27 years. The splenic area alone was exposed. Examination of the blood on Dec. 1st, before the application of the x rays gave the following result: red cells, 2,724,000 per cubic millimetre; and white cells, 11,200 per cubic millimetre (no differential count was recorded). After four sittings on Dec. 1st, 4th, 8th, and 14th the red cells numbered 1,074,000 and the white 8400 per cubic millimetre. Further counts made at irregular intervals after each series of x ray *séances* showed invariably a fall in the leucocytes, with a slight reduction also of the red cells. Once, however, the red cells were observed to rise, while the white cells sank. On May 10th the red cells were 1,560,000 and the white 4400 per cubic millimetre. Guilloz and Spillmann remark that the leucocytic formulæ were also modified but unfortunately they do not record any differential counts. At the same time the splenic tumour diminished in size and the general condition of the patient was much improved; in fact, there was a "veritable transformation."

Capps and Smith[11] contribute a preliminary report on x ray therapy in leukæmia. In ten collected cases of the spleno-myelogenous type the splenic tumour decreased in size and in three of these it became barely palpable. In four the leucocyte count fell under 10,000 per cubic millimetre with entire disappearance of myelocytes. In six lymphatic cases death resulted in four, but three of these fatal cases ran an acute or subacute course. The fourth showed a great shrinkage of the gland tumours and an improvement in the blood before death took place. The remaining two cases show steady continuous improvement in the blood, the glands, and the spleen. Capps and Smith also cite cases by Weber,[12] Dunn,[13] and Chester,[14] but we have been unable to refer to the original articles.

Rodhe[15] employed the x rays in a case of myelogenous leukæmia in a woman 34 years of age. The originally enormous splenic tumour rapidly diminished and the leukæmic blood-picture disappeared.

Fried[16] reports two cases of leukæmia in which improvement resulted but is unable to say whether the improvement will be permanent. The first case was that of a male, aged 59 years. Examination of the blood showed: red cells, 2,525,000 per cubic millimetre; white cells, 89,385 per cubic millimetre; ratio of white to red cells, 1 to 23 (myelocytes, 38,214; polynuclears, 52,143; lymphocytes, 8214); and hæmoglobin, 60 per cent. After 26 days the spleen was much reduced in size and a blood examination showed: hæmoglobin, 74 per cent.; red cells, 3,925,000 per cubic millimetre; and white cells, 6785 per cubic millimetre (myelocytes, 2500; and polynuclears, 4285). Great improvement resulted in the general condition. The second case was that of a female, aged 46 years. Examination of the blood showed: hæmoglobin, 60 per cent.; red cells, 3,075,000 per cubic millimetre; and white cells, 185,000 per cubic millimetre. In two days the leucocytes fell to 132,000 (myelocytes, 27,857; polynuclears, 72,857; and lymphocytes, 32,142). In 22 days the leucocytes fell to 50,500 and in 27 days to 31,400 per cubic millimetre. The red cells during the x ray treatment rose to 3,375,000 per cubic millimetre. The abdominal girth diminished from 92 to 88 centimetres. The patient is to be treated further.

Schweinburg[17] recorded at the Versammlung Deutscher Naturforscher und Aerzte zu Breslau, a case of splenic leukæmia in which treatment by the x rays produced diminution in the size of the spleen and in the number of the leucocytes. In the discussion Soetbeer likewise mentioned a case successfully treated by the x rays. Krause at the same meeting recorded two cases of pseudo-leukæmia and three cases of leukæmia treated by the x rays. The two cases of pseudo-leukæmia showed improvement in the general condition and the gland tumour diminished slightly in one and the splenic tumour in the other. Of the leukæmias one was much improved. The leucocytes sank from 320,000 to 75,000 per cubic millimetre, while the splenic tumour diminished by one-third. In the second case the leucocytes fell from 156,000 to 24,000 per cubic millimetre; the general condition was improved but diminution of the splenic tumour was not made out. In the third case the leucocytes fell from 220,000 to 80,000 per cubic millimetre but the splenic tumour had not as yet sensibly decreased.

A very interesting and detailed account is given by Schenck[18] of the results of x ray treatment of a case of lymphatic leukæmia. The case was treated in the German Hospital in London. Briefly the notes are these. The patient, a female, aged 53 years, was admitted on

[6] Journal of the American Medical Association, No. 1, 1904.
[7] Münchener Medicinishe Wochenschrift, No. 21, May 24th, 1904.
[8] Ibid., No. 24 June 14th, 1904.
[9] Comptes Rendus de la Société de Biologie, June 17th, 1904, p. 982.
[10] Ibid., May 27th, 1904, p. 828.
[11] Journal of the American Medical Association, Sept. 24th, 1904.
[12] American Medicine, May 21st, 1904.
[13] American Practice and News, July 15th, 1904.
[14] Chicago Medical Recorder, August, 1904.
[15] Deutsche Medicinische Wochenschrift, No. 40, Sept. 29th, 1904.
[16] Münchener Medicinische Wochenschrift, No 40, Oct. 4th, 1904.
[17] Ibid., No. 42, Oct. 18th, 1904.
[18] Ibid., Nov. 29th, 1904.

August 10th. The splenic tumour was fairly hard, reaching to the middle line of the abdomen, two fingers' breadth below the umbilicus. The red cells numbered 1,500,000 and the white cells 45,000 per cubic millimetre. The small lymphocytes formed the great majority of the leucocytes. The hæmoglobin was 30 per cent. The ratio of white to red cells was 1 to 33. From August 25th to Oct. 15th 35 x ray applications were made over the region of the spleen and the sternum. A few days before the commencement of this treatment the general condition of the patient showed a marked improvement which continued for some time during the x ray applications. Then a relapse occurred, accompanied by vomiting, diarrhœa, and albuminuria, which the continued applications of the x rays failed to check, and death occurred on Oct. 19th. The effects on the splenic tumour and the blood picture deserve mention. The spleen became at first somewhat softer but after the thirty-fifth sitting its volume had diminished so considerably that its anterior border was now removed a hand's-breadth from the middle line. Under the x ray treatment the red corpuscles rapidly and progressively diminished while the white cells, which had risen rapidly from 45,000 to 140,000 per cubic millimetre before commencement of the treatment, fell thereafter more slowly to 32,000. There was no apparent change in the differential count. Before the x ray treatment the lymphocytes formed 90 per cent. while the polynuclears formed 10 per cent. of the leucocytes. After 20 sittings these proportions remained the same.

In the same number of the *Münchener Medicinische Wochenschrift* a case of leukæmia treated with the x rays is reported by Cahen. After a few applications the splenic tumour became markedly softer and smaller. Ultimately after 22 sittings the spleen had diminished in volume so much as to be no longer palpable. Further, the white cells fell from 98,560 to 4375 per cubic millimetre, while the red cells rose from 3,925,000 to 4,625,000. The improvement in the general condition of the patient was also remarkable and Cahen hopes to avoid the unfortunate experience of Ahrens[19] by keeping the patient under close observation and applying the x rays periodically from the prophylactic point of view. After the twenty-fifth sitting a slight erythema was observed on the left side, but with ordinary treatment it disappeared.

Joachim and Kurpjuweit[20] report two cases of leukæmia treated by the x rays. The first was a typical case of myelæmia. The patient, a female, aged 39 years, was admitted on May 31st, 1904. She had an enormous splenic tumour. A blood examination on June 15th, two days before the commencement of the x ray treatment, showed hæmoglobin, 40 per cent.; red cells, 2,500,000 per cubic millimetre; and white cells, 693,000 per cubic millimetre; polynuclear cells, 32·8 per cent.; large and small lymphocytes, 2·6 per cent.; mononuclears, 1·2 per cent.; mast cells, 4·2 per cent.; eosinophiles, 1·8 per cent.; eosinophile myelocytes, 1·8 per cent.; and neutrophile ditto, 55·6 per cent. On Sept. 21st the white cells had fallen to 6300 and the red cells had risen to 3,400,000 per cubic millimetre, while the myelocyte percentage fell to 3·5 and the polynuclear percentage rose to 71·5. The last recorded count on Oct. 26th showed that the white cells had risen slightly to 26,000. It is noted that while the leucocytes were diminishing rapidly the mast cells also fell from a percentage of 4·6 to one of 1·4. The lymphocytes also fell at first parallel to the fall in the total leucocytes but later much more slowly. Before treatment the percentage was 6·1; in the first period of x ray treatment it fell to 5, then gradually rose to 13·5. The red cells almost doubled their number during the treatment and nucleated red cells fell considerably. The diminution in the size of the splenic tumour was very marked and the patient's general health had greatly improved. She appeared, in fact, perfectly healthy. The second case was one of chronic lymphæmia. The patient, a male, aged 50 years, was admitted on June 3rd. There was great enlargement of the spleen, the liver, and the lymph glands. Examination of the blood gave the following result: hæmoglobin, 55 per cent.; red cells, 3,200,000 per cubic millimetre; white cells, 385,000 per cubic millimetre; small lymphocytes, 80 per cent.; large ditto, 19 per cent.; and polynuclears, 1 per cent. Soon after admission the patient left the clinic but returned on August 1st, when it was found that the white cells numbered 500,000 and the red cells 2,500,000 per cubic millimetre. Four weeks after the commencement of the x ray treatment the white cells had fallen to 30,000 per cubic millimetre but there was no appreciable change in the differential count. The gland swellings diminished rapidly within the first 14 days and the splenic tumour was also very noticeably reduced in size. An improvement in the general condition was, however, not realised and the red cells sank still lower. The patient left the clinic again on Sept. 5th on domestic business, promising to return in a few days, but he remained away for two months. His condition on return was as follows. He appeared somewhat more reduced than before; the lymph glands showed no change and the spleen had not become larger. Examination of the blood showed: hæmoglobin, 35 per cent.; red cells, 1,600,000 per cubic millimetre; white cells, 8800 per cubic millimetre; small lymphocytes, 45·5 per cent.; large ditto, 30·5 per cent.; mononuclears, 2·5 per cent.; polynuclears, 20·5 per cent.; and eosinophiles, 1·0 per cent. There was thus a considerable rise in the percentage of polynuclear elements. In other respects the blood condition was not satisfactory as the red cells remained at a low level and exhibited the changes associated with severe anæmias.

At a sitting of the Berlin Medical Society on Nov. 23rd, 1904, Grawitz[21] reported shortly on a case of leukæmia treated by him. The patient was a male, aged 54 years. The red cells were 1,000,000 per cubic millimetre and there were 1,250,000 "lymphoidzellen" per cubic millimetre. The spleen, the liver, and the glands were much enlarged. After 23 sittings there was marked improvement. The spleen, the liver, and the glands had been reduced in size and the "lymphoidzellen" had almost completely disappeared. At the same meeting Levy-Dorn showed a case of pseudo-leukæmia successfully treated by radiotherapy. He found that only those gland swellings exposed to the rays disappeared while the others either remained unaltered or increased in size.

It will be seen from a careful analysis of the recorded cases that with one or two exceptions (the cases of Ahrens and Stone) all the patients suffering from myelogenous leukæmia have experienced under x ray treatment remarkable improvement both in the objective and subjective symptoms. At this stage, however, it would be quite premature to presume that the improvement will be a permanent one. Nearly all the observers have been so surprised at the almost immediate effect of x ray treatment on the blood, splenic tumour, and general condition of the patient that they have published their results forthwith. When these so-called "cured" cases and those in which marked improvement has resulted have been under observation for some considerable time, with or without renewal of the treatment, we shall be in a better position to judge of the true value of this novel therapeutic method. Thus Senn, in a letter (March 20th, 1904) to Grosch and Stone,[22] reported that his two cases of pseudo-leukæmia were well and the case of myelogenous leukæmia which made such an excellent recovery had returned with a moderate relapse and was again under x ray treatment. At present, however, we can have no doubts regarding the more or less rapid effects of x ray treatment on the blood picture, the splenic tumour, and the general condition. In some cases (notably Senn's and Bryant and Crane's first case) the leukæmic blood picture is said to have entirely disappeared, while most of the observers, including ourselves, have been enabled to record only a rapid fall of the white cells to a normal, or approximately normal, level, this fall being invariably accompanied by a great diminution in the myelocyte percentage and a corresponding rise in the polynuclear percentage. In other words, the essentially leukæmic character of the blood has shown a tendency to disappear but not entirely. Detailed blood counts have, however, been recorded in only a few cases. A very satisfactory feature has been the almost invariable rise of the red cells to a higher level, while the leucocytes fell. This feature was notably absent in the cases of lymphatic leukæmia where, it must be confessed, the general results of the x ray treatment have been only fairly satisfactory. Undoubtedly in this disease also the lymphocytes are very markedly reduced under the influence of the x rays, though there does not invariably occur that modification in the leucocytic formula which is so marked a feature in the myelogenous cases. The splenic and glandular swellings of lymphatic leukæmia and of pseudo-leukæmia

[19] Loc. cit.
[20] Deutsche Medicinische Wochenschrift, No. 49, Dec. 1st, 1904.
[21] Deutsche Medicinische Wochenschrift, No. 50, Dec. 8th, 1904.
[22] Loc. cit.

(Hodgkin's disease) are also susceptible to x ray treatment. It is curious that the general condition does not appear to improve so noticeably in lymphæmia as in myelæmia. Possibly, as Capps and Smith[23] also remark, many of the cases of lymphæmia treated with the x rays have been running an acute or subacute course and are therefore not so readily influenced by radiotherapy. Capps and Smith also state that the chronic form of lymphatic leukæmia responds to the x rays even more promptly than the spleno-myelogenous type. The effects produced by radiotherapy on the splenic tumour in myelæmia have been variable. Senn, Bryant and Crane, and Ahrens reported an almost complete disappearance of the splenic tumour, while others have been content to record only a moderate reduction in volume. In a few cases the only change was one of consistence, the tumour becoming much softer and more easily palpated. It must be remembered, however, that a slight reduction of volume in such an enormous splenic tumour as that found in leucocythæmia is rather difficult to certify clinically and there is little doubt that the ultimate result of x ray treatment on the splenic tumour will depend largely on its histological features initially.

When fibrosis has occurred in the later stages of the leukæmic spleen it is doubtful in the light of Heinecke's results whether much reduction in volume can be expected. However, we shall have to await the results of further work before we can express any dogmatic opinions on this point. In nearly all the cases, except those of lymphatic leukæmia, there was a very marked improvement in the general condition and wellbeing of the patient and this is perhaps the most satisfactory element in the treatment by radiotherapy, for leukæmia has almost invariably progressed towards a fatal conclusion.

It behoves us finally to discuss as briefly as possible the theories which have been put forward to explain the mode of action of radiotherapy in leukæmia. Naturally this subject is as yet in the early experimental stage, but already one or two important contributions have been made towards the elucidation of x ray influence on the blood-forming organs. Senn believed that his results in leukæmia were due to an antiparasitic action on the part of the x rays and to those who sympathise with Löwit's views on the etiology of leukæmia this explanation of Senn may appear fairly plausible. To Heinecke's work[24] we have already referred. His results appear at least to afford a physiological foundation for radiotherapy in leukæmia, in so far as the excess of white cells in the circulating blood and the presence of abnormal cell elements are concerned. But this is, after all, only a symptom. Whether the x rays directly influence the exciting factor in leukæmia is another question. Further, the bone marrow is probably the tissue whose function is primarily at fault and Heinecke's remarks on the effect of the x rays on the bone marrow have been called in question lately by Mosse and Milchner[25] as being too vague. These latter observers working with rabbits have found alterations in the lymphoid and myeloid elements of the marrow under the influence of the x rays. These changes consisted in a partial destruction of the white cells of the marrow, while the protoplasm of the neutrophile cells especially showed a great deficiency of granules. Curiously enough, the red cells, nucleated and non-nucleated, were not affected. The authors argue from these facts that there is a field for radiotherapy in leukæmia but not in pernicious anæmia. These facts are interesting in the light of the results of x ray therapy on the red cells in the cases of spleno-myelogenous leukæmia. It was found that the red cells invariably rose to a higher level as the leucocytes fell. We must remember, however, that remarkable variations may occur in the red counts from day to day in cases of leukæmia which are not under any special treatment. We were particularly struck with this fact in our case during the months preceding the adoption of x ray treatment.

Joachim and Kurpjuweit[26] and Mosse and Milchner[27] have respectively subjected leukæmic blood and normal blood corpuscles in salt solution to the direct action of the x rays but no changes of any kind were noted either in the leukæmia blood elements or in the normal red blood corpuscles. These experimental results would seem to point to the necessity of subjecting all the bone marrow in the body to the influence of the x rays—i.e., on the supposition that leukæmia is primarily a bone marrow disease. Failure to do so may have been the cause of the generally incomplete response of the myelæmia to the x rays, for, as noted above, the leucocytes sank under the influence of the x rays to a very low level, while the myelæmic picture, though much modified, still remained; and further, on the cessation of x ray treatment after this low leucocytic level had been reached, there was a tendency on the part of the leucocytes to rise slightly. This was noticeable in our case. After the leucocytes came down to a level of 20,000 per cubic millimetre in our patient no amount of exposures of spleen and epiphyses to the x rays would produce a further reduction.

It has been shown by Lépine and Boulad[28] that enzymes can be influenced by the Roentgen rays and in the light of Ehrlich's view that in myelæmia there exists a chemiotactic enzyme in the blood it is possible that the destruction of this enzyme prevents the further inroad of leucocytes into the circulating stream. However, as Joachim and Kurpjuweit maintain, the x rays in leukæmia do not act directly on the blood but on the diseased leukæmic tissue. These observers in a fresh case of leukæmia exposed only the liver area to the rays but there was no result after 14 successive daily séances. It was also shown that exposure of the spleen only produced a great fall in the leucocytes in the first case described by them, while later exposure of the bones only was also successful. The authors intend in their next case of leukæmia to begin by exposing the bones only to the x rays. In fact, it is possible that the comparative effects of radiotherapy on the bone marrow and the spleen may add much to our knowledge of the pathology of leukæmia.

We may refer to one other possible explanation of the action of the x rays. It has been shown by Schwarz[29] that radium rays have a destructive action on the lecithin of the hen's egg and as lecithin is an invariable constituent of cells undergoing rapid development as leucocytes, spermatozoa, and tumour elements, the reduction in leucocytes in leukæmia by the x rays may be due to a similar cause. The presence of lecithin bears so important a relationship to the developmental capacity of the cell (Hoppe-Seyler) that its disintegration would be fatal to further cell-development.

Wohlgemuth[30] does not find that radium has a selective action on lecithin. He thinks rather that the breaking-up of the lecithin in egg albumin is due solely to the influence of autolytic ferments contained in the egg. The action of these rays on living tissues and cells opens up a very wide field for research, for as yet the science of experimental cytology is in its infancy.

In conclusion, we may note that on Dec. 1st x ray séances were resumed in our case. Any further developments which may arise in our patient we hope to communicate at a later date.

[23] Loc. cit. [24] Loc. cit.
[25] Berliner Klinische Wochenschrift, No. 49, Dec. 5th, 1904.
[26] Loc. cit. [27] Loc. cit.

THE INFLUENCE OF RAINY WINDS ON PHTHISIS.

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(*Concluded from p. 15.*)

PART II.—WIND AND RAIN IN THE MOST SUCCESSFUL PHTHISIS HEALTH RESORTS.

IT is impossible to make any general statement with regard to the effects of strong rainy winds on phthisical patients in foreign countries because sufficient material does not exist; I will only refer to a statement sent me by Dr. A. A. Rodriguez who has been so good as to make a collective inquiry amongst the medical men in the Azores. It will serve as an example of existing difference of opinion. (*a*) Some have discovered no effect of any wind on phthisis patients. (*b*) Some have noticed an injurious effect of the warm damp winds from the south. (*c*) Some have noticed an injurious effect of these winds from the south and a beneficial effect of the winds from the north which are dry. But there remains the indirect evidence of the relations of health resorts to strong rainy winds. At present it would

[28] Académie des Sciences, cxxxviii., 2, p. 65.
[29] Pflüger's Archiv, vol. c., p. 532.
[30] Berliner Klinische Wochenschrift, No. 26, p. 704, ref. Biochemisches Centralblatt, December, 1904.

be scarcely justifiable to impugn the resorts which are exposed to such winds, but it will be useful to inquire whether any admittedly very successful health resorts are exposed to them. Davos in winter is singularly calm. Nordrach is exceptionally well sheltered. Görbersdorf is well sheltered from rainy wind. Weissenburg lies in a deep gorge almost windless. Eaux Bonnes and Cauterets are in deep sheltered valleys. Jauja and the other resorts of the Peruvian Andes lie in deep well-sheltered valleys. The health resorts of Argentina are sheltered from rainy winds. The Khirghiz Steppes are very free from rain. Colorado and New Mexico have much wind but it is usually dry. The Darling Downs of Queensland have little rainy wind. The Karoo, Orange Free State, and Transvaal have no frequent rainy winds. One common characteristic, therefore, of these climates, otherwise so dissimilar, is their freedom from prevalent strong rainy winds.

It may be objected that most of the resorts mentioned are at so-called high altitudes and, indeed, the efficacy of the majority of them is generally attributed to their height above sea-level. So a few words must be said on this point. Apart from other considerations, to be presently mentioned, it seems to me that in view of the failure of the existing Indian hill stations as phthisis health resorts the effect of altitude on phthisis patients must be at least subordinate to the effect of the rainy winds to which Indian hill stations are mostly exposed. Their unsuitability for phthisis has scarcely received the attention which the great experience and ability of those who have condemned them should have insured. Sir Joseph Fayrer refers to them as follows.[1] Simla, 6953 feet high, "should be avoided by the phthisical." Ranikhet, 6068 feet high, is not of much real service. Darjeeling, 6912 feet high, more useful in pulmonary organic disease than the foregoing, enjoys considerable immunity from wind and storms. Pachmari, 3564 feet high, is ineligible as a resort for phthisis. Mount Aboo, 3945 feet high: phthisis is not benefited there. Mahabaleshwar, from 4500 to 4700 feet high, after the mists set in in May is prejudicial to phthisis. Nilgherries, average elevation of stations about 6500 feet, are not advantageous in phthisis. Newera Eliya (Ceylon), 6150 feet high, "has an evil reputation for cases of phthisis." At Dalhousie, 6800 feet high, in 1897, Surgeon-General Keogh informs me, there were six admissions for phthisis in the first stage of the disease. These were "returned to the plains, as the climate was too severe for them."[2] I shall refer again to high altitudes in considering their influence on phthisis prevalence.

The freedom from strong rainy winds, therefore, which characterises the very successful resorts, fits in with the observation made in Devonshire, that such winds are injurious to phthisis patients.

PART III.—OTHER INFLUENCES.

Lastly, it is necessary, in order to establish the validity of conclusions based on the facts so far enumerated, to consider the relative strength of the other influences known or supposed to affect phthisis. These other influences may be thus enumerated:—

Climatic influences.—(1) Soil; (2) altitude; (3) temperature; (4) dry wind, especially when dusty; and (5) rainfall.

Social influences.—(6) Density of population; (7) insanitation; (8) poverty; (9) occupation; (10) race; and (11) preventive measures.

Pathological influences.—(12) Prevalence of other forms of tubercle; (13) prevalence of other "respiratory diseases"; and (14) prevalence of malaria.

Soil.—Current opinion on the relation of soil to phthisis rests on Sir George Buchanan's work in 1851 to 1860.[3] If his figures be examined, it will be found that *rainy wind had a greater influence than soil*, although the area used was well adapted to show the effect of soil and ill adapted to show the influence of rainy wind. The south-west in that area is the prevalent wind,[4] and as elsewhere in the south of England it is a rainy wind. If Buchanan's districts are arranged in his own order of ascending phthisis death-rate (see Table XV.) it will be found that the districts obviously sheltered from south-west wind come at the beginning of the table and those obviously exposed at the

TABLE XV.—"*Registration Districts in the Order of their Proper Mortality from Consumption.*"

Name of district.	Mean phthisis death-rate of two sexes, 15–55.	Shelter and exposure as regards S.W. wind.*
Dartford	261	S
Epsom	277	—
Milton	276	S
Godstone	282	—
North Aylesford	289	S
Dover	296	S
Bromley	294	—
Steyning	295	s
Chertsey	296	S
Croydon	303	—
Cranbrook	311	—
Richmond	313	—
Kingston	315	—
Elham (*a*)	277	—
Blean	315	S
Bridge (*b*)	331	—
Gravesend (*c*)	405	S
East Grinstead	333	—
Reigate	337	—
Eastbourne (*d*)	336	S
Farnham (*e*)	292	—
Hambledon	343	—
Battle (*f*)	294	—
Canterbury (*g*)	384	—
Hollingbourne	352	—
Malling	356	—
East Ashford	359	x
Sevenoaks	361	—
Guildford	369	—
Farnborough (*h*)	291	—
Eastry	371	S
Faversham	370	S
Rye	371	—
Maidstone (*i*)	434	—
Cuckfield	387	x
Dorking	399	—
Uckfield	398	—
Hailsham	392	x
Ticehurst	401	—
Worthing (*j*)	419	X
West Ashford	421	x
Lewes (*k*)	502	x
Tenterden	435	—
Horsham	440	X
Westhampnett (*l*)	441	X
Midhurst	456	—
Thakeham	454	x
Petworth	462	—
Westbourne	498	X
Chichester (*m*)	566	X
Eight Districts whose Order is Uncertain amongst the Others:—		
Sheppey	202	S
Hastings	498	X
Thanet	392	s
Hoo	301	S
Tunbridge	399	—
Medway	480	—
Romney Marsh	348	? s
Brighton	435	X

* S = well sheltered; s = fairly sheltered; X = fully exposed; x = fairly exposed. Doubtful districts are unmarked.

Sir George Buchanan's notes.—(*a*) Of Elham, the male rate being of no value, ten has been subtracted from the female rate for the approximate true mean 313. (*b*) The rates of Bridge become 342 mean and 425 female if corrected for Canterbury Hospital. (*c*) Gravesend has been classed by its female rate as being more trustworthy than

[1] Health in India, Book of Health, pp. 935–941.

[2] Private report kindly prepared at the request of Sir Joseph Fayrer.

[3] Tenth Report of the Medical Officer of the Privy Council, 1867, pp. 57–110.

[4] Climates and Baths of Great Britain, vol. i., pp. 241 and 252. Dr. W. Ewart on the Climate of the South-Eastern Counties.

the mean. (*d*) The rates of Eastbourne might, perhaps, be taken as slightly smaller in consideration of some invalid visitors. (*e*) Registered male rate of Farnham being of no value ten has been subtracted from the female rate for the approximative true mean 339. (*f*) At Battle correction for obvious inclusion of much phthisis in registered lung disease brings phthisis rates to 344 mean and 396 female. (*g*) For Canterbury deduction for hospital patients brought from other districts makes true mean rate 348 and female rate 398. (*h*) For Farnborough, the registered male rate being of no value, ten has been subtracted from the female rate for the approximative true mean 371. (*i*) In Maidstone deduction for deaths in lunatic asylum patients brought from other districts makes true mean rate 379 and true female rate 405. (*j*) At Worthing the rate should, perhaps, be taken as somewhat smaller in consideration of some invalid visitors. (*k*) In Lewes correction for hospital and prison brings the true rate to 426 mean and 464 female. (*l*) The rates of Westhampnett become 449 mean and 521 female if corrected for Chichester Hospital. (*m*) At Chichester deduction for hospital deaths in patients from other districts brings the rates to 536 mean and 450 female rate.

end. Maps constructed from his figures show well this general correspondence of low death-rate with shelter and high death-rate with exposure. Again, if Buchanan's two tables of "fairly comparable districts" be taken, only excluding doubtful districts and districts obviously exposed to south-west winds (see Tables XVI. and XVII.) and if, in each

TABLE XVI.—"*Districts the majority of whose Population live on the Weald Country*" *(omitting Hastings and Tunbridge, which were doubtful, and Horsham, Hailsham, and Cuckfield, which are exposed to south-west wind).*

Name of district.	Percentage of population on wetter soils.	Phthisis death-rate per 100,000.
Cranbrook	18	311
East Grinstead...	18	333
Uckfield	17	398
Battle	20	344
Rye	21	371
Maidstone	24	379
—	Average 19·6 per cent.	356
Hambledon	41	343
Ticehurst	33	401
Tenterden	58	435
Petworth	70	462
—	Average 50·0 per cent.	410

Here an increase of 155 per cent. in the proportion of the population living on the wetter soils only entails an increase of 15 per cent. in the phthisis death-rate.

TABLE XVII.—"*Districts where Half or More of the People Live on Lower Greensand*" *(omitting West Ashford and Thakeham, which are exposed to south-west wind).*

Name of district.	Percentage of population on wetter soils.	Phthisis death-rate per 100,000.
Godstone	13	282
Elham	24	313
Reigate	27	337
Malling	20	356
—	Average 21 per cent.	322
Hambledon	41	343
Sevenoaks	40	361
Dorking	32	399
Midhurst	58	455
—	Average 42 per cent.	389

Here an increase of 100 per cent. in the proportion of the population living on the wetter soils only entails an increase of 20 per cent. in the phthisis death-rate.

table, a comparison be made between the average phthisis death-rate of the districts, in which less than 30 per cent. of the people are on wetter soil, and the death-rate of the districts, in which more than 30 per cent. of the people are so placed, it will be found that dampness of soil produces less effect on phthisis than exposure to south-west wind (see Table XVIII.). Lastly, with regard to Buchanan's

TABLE XVIII.—*Fully Sheltered and Fully Exposed Districts as regards South-west Wind.*

Fully sheltered districts.		Fully exposed districts.	
Name of district.	Phthisis death-rate.	Name of district.	Phthisis death-rate.
Milton...	276	Chichester... ...	536
Dover	296	Worthing	419
Eastbourne ...	336	Westhampnett...	449
Dartford	261	Horsham	440
Faversham ...	370	Westbourne ...	498
Gravesend	331		
North Aylesford	289		
Chertsey	296		
Eastry...	371		
Average	314	Average	468

Here the differences in the death-rate are much more obvious and uniform and the average of the exposed districts is 49 per cent., of itself higher than that of the sheltered.

two chief exceptions, on which he lays such stress,[5] —viz., Sheppey and Thanet—the low death-rate of Sheppey can be fully explained by its shelter from south-west wind, and the moderate death-rate of Romney Marsh can be at least partly explained in the same way. For the south-west wind only reaches Sheppey broken and dried by several ridges of hills, the rainfall only reaching 20 inches, whilst Romney Marsh, flat and largely below high-tide level, walled round with sand dunes and dykes and with a low rainfall, about 16 inches at Dungeness, cannot be said to be exposed to rainy winds. It is curious that Buchanan's other doubtful districts should have death-rates corresponding in the main with their south-westerly shelter or exposure where these can be fairly stated.

Altitude.—The idea that phthisis death-rate lessens as altitude increases originated in the observation of its rarity at certain places in the Andes at heights of from 5000 to 13,000 feet. Attempts have been made to prove this effect of altitude, but the results have been disappointing. Merbach's table for Saxony (see Table XIX.),[6] if the towns

TABLE XIX.—*Merbach's Table for Saxony, 1873–75, dealing with Towns of over 5000 Inhabitants only and Deaths from Phthisis between the Ages of 16 and 60 years.*

Elevation in metres.		Phthisis death-rate per 1000.
100 to 200	4·9	
200 „ 300	3·3	
300 „ 400	3·2	
400 „ 500	3·5	
550 „ 650	3·2	

under 200 metres high be excluded as probably the largest and most industrial, merely tends to show that altitude has no effect. Corval's table for Baden (see Tables XX. and XXI.),[7] which includes all forms of tuberculosis as well as

TABLE XX.—*Corval's Table for Baden, 1869–72, including all Tuberculous Deaths and Deaths from "Chronic Pneumonia."*

Altitude in feet.	Number of towns or villages.	Population, average of four years.	Death-rate per 1000.
330 to 1000	750	933,773	3·36
1000 „ 1500	337	224,210	2·75
1500 „ 2000	160	81,066	2·60
2000 „ 2500	190	104,287	2·75
2500 „ 3000	97	58,155	2·33
Over 3000	47	20,367	2·17

[5] Op. cit., p. 108.
[6] Hirsch: Op. cit., vol. iii., p. 207.
[7] Ibid., pp. 208–09.

TABLE XXI.—*Corval's Table modified by Schlwokow.*

Altitude in feet.	Death-rate in towns of over 3000 inhabitants.	Death-rate in towns of under 3000 inhabitants.
330 to 1000	4·05	3·11
1000 ,, 1500	3·08	2·73
1500 ,, 2000	4·99	2·49
2000 ,, 2500	4·72	2·71
2500 ,, 3000	3·06	2·29
Over 3000	—	2·17

so-called "chronic pneumonia," does seem to show a decrease in the death-rates with increasing height, but this increase is a very irregular one. Müller's table for Switzerland (see Table XXII.)[8] shows a still less regular decrease and when

TABLE XXII.—*Müller's Table for Switzerland published in 1876. The Periods of Observation in Various Cantons vary from 1 to 5 Years.*

Altitude in metres.	Industrial cantons.	Mixed cantons.	Agricultural cantons.	Average.
100 to 500	2·7	1·85	1·4	2·15
500 ,, 700	3·0	1·65	1·2	1·9
700 ,, 900	1·35	1·7	0·7	1·0
900 ,, 1100	1·5	1·9	1·9	1·2
1100 ,, 1300	2·3	2·3	0·7	1·9
1300 ,, 1500	—	1·4	0·6	0·8
1500 ,, 1800	—	1·3	0·7	1·1

his table for the agricultural cantons with imported cases excluded is examined (see Table XXIII.)[9] no influence whatever of phthisis can be traced between 700 and 1800 metres of altitude. The latest table prepared to show the influence of altitude with which I am acquainted was published in 1895 by the Government

TABLE XXIII.—*Müller, Agricultural Cantons, excluding Imported Cases.*

Altitude in metres.	Population.	Phthisis death-rate per 1000.
200 to 499	85,684	1·2
500 ,, 699	51,157	1·1
700 ,, 899	82,560	0·6
900 ,, 1099	31,082	0·5
1100 ,, 1299	3,056	0·7
1300 ,, 1499	5,648	0·6
1500 ,, 1800	548	0·7

of the Grisons. This canton affords an excellent field for comparing death-rates both at different altitudes and under different conditions of wind shelter and exposure.

The rainy winds of Central Europe are the south-west, west, and north-west, together with, to a less extent, the south-east and south. The west wind can only reach the Grisons much broken and dried; the south-west as a rainy wind only affects considerably the Upper Engadine. The south-east has probably some effect as a rainy wind on the highest villages of the valleys which run down into Italy. Only the north-west, north-north-west, and west-north-west, entering at the gap of the Rhine valley, can widely affect the canton. These north-westerly winds are especially prevalent in the summer months, the time of the principal rainfall of this region.[10] The table for the Grisons was arranged in unequal divisions of altitude and it was first necessary to re-arrange it in divisions of 200 metres-intervals. (See Table XXIV.) So arranged, a definite effect of altitude was by no means clear, and at each height there were pronounced exceptions suggesting some more powerful influence. It seemed possible

[8] Ibid., p. 210.

[9] Müller: Die Verbreitung der Lungenschwindsucht in der Schweiz, Table xvii.

[10] Hann: Op. cit., vol. iii., pp. 158, 159, 167.

TABLE XXIV.—*Tuberculosis in the Grisons. Being a Summary of Tables published by the Cantonal Government in 1895, rearranged for Equal Intervals of Height.*

	Death-rate per 1000.
a. Places up to 600 metres high	12·08
b. Places from 601 to 800 metres high	8·8
c. ,, ,, 801 ,, 1000 ,, ,, ...	12·5
d. ,, ,, 1001 ,, 1200 ,, ,, ...	7·1
e. ,, ,, 1201 ,, 1400 ,, ,, ...	7·5
f. ,, ,, 1401 ,, 1600 ,, ,, ...	4·2
g. ,, ,, 1601 ,, 1880 ,, ,, ...	3·6

TABLE XXV.—*Tuberculosis in the Grisons. Summary as regards Shelter and Exposure.*

Shelter and exposure.	Population.	Tuberculosis death-rate per 1000.
Sheltered from all	18,734	5·3
Exposed only to W.N.W., N.W., or N.N.W.	9,256	13·2
,, ,, N. or N.E.	6,043	6·9
,, ,, E.N.E., E., or S.E.	6,173	5·8
,, ,, W.	280	14·2
,, ,, S.W. or W.S.W.	118	19·7

It should be observed that the populations exposed to W., S.W., and W.S.W. are very much smaller than the others.

that this was rainy wind. Accordingly, a table was constructed (see Table XXV.) showing the phthisis death-rates in localities exposed to various winds and it was at once obvious that a higher death-rate accompanied exposure to winds from any westerly quarter. Next, a table was drawn up of localities with death-rates under 5 per 1000, and of localities with death-rates over 10 per 1000. (See Table XXVI.) The places with lower death-rates were

TABLE XXVI.—*Low Mortalities (under 5·0 per 1000).*

San Vittore	3·87	Sheltered.
Roveredo...	1·87	,,
Lostallo	2·81	,,
Mastrils	2·64	S.E., E.
Maladers	4·17	Sheltered.
Brusio	0·87	,,
Scharans	4·07	N.W.
Tomils	3·58	Sheltered.
Stampa	1·86	,,
Lervis	3·70	Broken W.S.W. and E.N.E.
Somvix	1·71	E.N.E.
Filisur	3·66	Sheltered.
Flüms	3·79	,,
Disentis	0·75	,,
Cumbels	3·02	N.E.
Praz	4·31	N.E.
Klosters	1·31	Sheltered.
Churwalden	4·41	N.
Remüs...	1·88	Sheltered.
Villa	3·75	N.E.
Schuls	3·17	Sheltered.
Vals	2·82	N., N.N.E.
Brigels...	1·18	Sheltered.
Lumbrein	3·74	N.E.
Tarasp...	3·11	Sheltered.
Lavin	4·08	,,
Schleins	4·78	,,
Safien	1·90	N.N.E.
Davos	2·06	S.W., N.E.
Ponte	4·74	Sheltered.
Zuoz	4·66	,,
Celerina	3·38	,,
Pontresina...	3·92	,,

Of these Scharans may be regarded as perhaps a fairly exposed place to N.W. Its population is 492. Davos seems to have a dry S.W. wind.

High Mortalities (over 10·0 per 1000).

Malenfeld	12·22	W.N.W.
Haldenstein	19·14	N.E.
Igis	17·03	N.W.
Zizers	13·16	N.W.
Chur	15·44	W.S.W., N.
Rothenbrunnen	37·50	?
Jenins...	11·99	W.N.W.
Bonaduz	13·27	?
Fürstenau	12·68	N.W.?
Scheirs	11·04	Sheltered?
Tamins	11·57	W.S.W., E.N.E.
Sils	15·87	N.W.
Ilanz	10·17	W., E.
Thusis	11·23	N.N.W., deflected.
Küblis...	19·53	Sheltered?
Vallendas	19·44	W.S.W., E.N.E.
Tiefenkastel	25·13	N.W.
Arvigo...	12·90	Sheltered.
Trins	18·06	W.S.W.
Surava...	14·60	W.
Fürth	18·02	N.E.
Versam	10·26	W. & E.
Fanas	10·79	? W.S.W.
Andeer	10·43	— N.
Saas	10·65	? sheltered.
Alvaschein...	13·89	N.W.
S. Domenica	10·64	Sheltered.
Pitasch	25·86	N.W.
Valzeina	23·26	N. ? N.W.
Briens	26·32	W.
Andest...	17·94	?
Fortein	21·28	Sheltered?
Duvin	17·70	N.N.W.
Conters	44·87	N.W.
Obervatz	13·02	S.W.
Sarn	16·76	N.E.
Landavenna	17·24	Sheltered.
Salux	12·90	N.W.
Roffna...	25·00	,,
Tinzen...	16·06	,,
Lenz	31·43	S.W.
Bergün	11·71	N.W.
Langwies	13·11	Sheltered?
Stürvis	11·24	N.W.
Wiesen	12·05	? S.W.
Feldis	20·13	N.W.
Innerferrara	13·87	N.N.W.
Parpan	14·71	N.W.
Sur	21·90	Sheltered?
Fetan	13·82	,,
Guarda	11·45	Sheltered.
Sils	30·33	S.W., N.E.
Arosa	22·73	S.W., S.E.

Of these Haldenstein may get deflected westerly winds. Its inhabitants and those of Sur can scarcely go any distance out of doors without encountering north-west wind. Fetan lies so high it probably gets some S.W. down the valley.

then with few exceptions seen to be sheltered from all westerly winds, whilst the places with the higher death-rates were, with two exceptions, exposed to W., S.W., or N.W. winds. The winds causing higher death-rates were usually north-westerly. So another table was constructed comparing at each altitude the death-rates in the populations sheltered from north-west, north-north-west, and west-north-west winds, with the death-rates in the populations exposed to these winds. (See Table XXVII.) The result was very striking. At each level the exposed population suffered far more (twice to seven times as much) from phthisis than the sheltered population. But two other facts became also obvious—namely, that, as altitude increased, a greater proportion of the people tended to live in sheltered places, and that in neither exposed nor sheltered places was there any indication that altitude lessened the mortality. Finally, to

TABLE XXVII.—*The N.W., N.N.W., and W.N.W. Winds. Effects of Exposure to, and Shelter from, them at Various Heights (Summary). It should be observed that the exposed populations at 801–1000, at 1001–1200, and at 1401–1600 metres are very small.*

Altitude in metres.	Fully exposed to N.W.		Fully sheltered from N.W.	
	Population.	Death-rate per 1000.	Population.	Death-rate per 1000.
Up to 600	14,039	14·4	4874	5·3
601 ,, 800	1,937	12·4	4004	5·2
801 ,, 1000	199	25·1	2369	6·3
1001 ,, 1200	260	19·2	7212	5·6
1201 ,, 1400	2,092	15·3	5237	2·4
1401 ,, 1600	270	18·5	8273	3·8
1601 ,, 1880	0	—	4966	8·6

investigate fairly the question of the effect of altitude a table was made out showing the death-rate at successive heights in places sheltered from all rainy winds (Table XXVIII.). From this table the conclusion seems

TABLE XXVIII.—*Sheltered from all Westerly Winds and from Sirocco (Summary).*

	Population.
Up to 600 metres	3·9 per 1000 2898
601 ,, 800 ,, ...	4·7 ,, ,, ... 3173
801 ,, 1000 ,, ...	4·1 ,, ,, ... 971
1001 ,, 1200 ,, ...	2·8 ,, ,, ... 4254
1201 ,, 1400 ,, ...	2·3 ,, ,, ... 5059
1401 ,, 1600 ,, ...	4·9 ,, ,, ... 3693
1601 ,, 1880 ,, ...	6·7 ,, ,, ... 3538

inevitable that altitude alone has extremely little if any influence on the death-rate from phthisis. The supposed influence of altitude would appear, in fact, to be an indirect influence of rainy wind and of the consequent increasing bleakness at increasing heights which drives the inhabitants to live in sheltered places.

Now how can this conclusion be reconciled with the claims of absolute or comparative phthisis immunity at certain other high altitudes? If the places in the Andes which have a well-grounded reputation are examined it will be found they are protected from the prevalent rainy winds. In North America the city of Mexico is very free from strong winds and in the region of the Rockies the winds are usually dry. The highlands of Persia and of South Africa are extremely dry; the plateau of Abyssinia is ringed in by high mountains. The northern spurs of the Carpathians are sheltered from the rainy westerly winds. Briançon is shut in from westerly winds. Hirsch is wrong about India, for in Coorg phthisis is common,[11] and amongst native Indian troops it appears to be most frequent at the hill stations.[12] The three places in the Himalayan system of mountains where phthisis appears to be rare—viz., Kashmir,[13] the valley of Nepaul,[14] and Manipur[15]—have no strong rainy winds. There is, in fact, no evidence whatever that altitude *per se* has any influence on the prevalence of phthisis.

Temperature.—Temperature alone seems to have little, if any, effect. Thus, in cold climates phthisis may be rare, as in Iceland, or common, as in West Greenland;[16] and in hot climates rare, as in Upper Egypt, or prevalent, as in Tahiti.[17] In climates of small mean annual range of temperature it may be rare, as at Lagos, or common, as at Georgetown in British Guiana; and, where the mean annual range is great, rare or absent as in the Khirghiz Steppes, or frequent, as in Mid-Russia. Even mean daily range seems to make no marked difference; phthisis is rare at Luxor and common at Moscow, both of which have a great daily range.

Dry winds.—Dry winds seem to have little effect as compared with rainy winds. The plains of Colorado, South

[11] Report on the Congress of Tuberculosis at Berlin by Dr. Alexander Crombie, delegate for India, p. 10.
[12] Ibid., p. 11.
[13] Private letter from Dr. A. Neve.
[14] F. N. Macnamara: Himalayan India, its Climate and Diseases, p. 258.
[15] Ibid., p. 205. "Phthisis does not seem to have any existence in the valley."
[16] Clemow: Op. cit., p. 461.
[17] Davidson: Op. cit., vol. ii., p. 77.

Africa, and inland Australia furnish ample evidence that strong dry winds, even when sometimes laden with dust, can coexist with low phthisis mortality. That they have some effect seems, however, probable. Thus in Northern Nigeria, where the disease is rare, the cases which do occur present themselves after cold dry winds have been blowing.

Rainfall.—Heavy rainfall *per se* seems to have no effect. At Quito the rainfall is 70 inches and at Lagos it is 56 and such examples might be multiplied without difficulty. The rainfall map of the United States by no means corresponds with a map of its phthisis distribution. On the other hand, a very low rainfall within the tropics may coexist with much phthisis, as along the coast of Peru.[18]

Density of population.—The frequency of phthisis in large towns appears in most countries to be only half as great again as in the adjoining country districts.[19] In some countries, as in some parts of Norway, phthisis may be actually commoner in the rural districts than in the towns.[20] It might be expected if the influence of density of population is less than that of strong rainy winds that in regions where these winds are prevalent the phthisis death-rate would become heavier in the country than in the towns, since the buildings of a town themselves furnish shelter to the inhabitants. And this appears to be the case, as shown both by Schlockow's figures for Prussia and Billings's figures for the United States.

Insanitation and poverty.—The influence of these cannot be easily separated from the influence of density of population of which they form a part. Phthisis may be rare where both are extreme but in Budapest Körösi calculates that there are 40 per cent. more deaths among the poor than among the rich.[21]

Occupation.—Occupation has a very marked influence on individuals, but a much less marked influence on considerable communities, in which many occupations, good and bad, are mingled. Thus in Redruth district, in Cornwall, where tin mining is extensive, the death-rate in 1881 to 1890 was 1·8 per 1000, whilst in the Scilly Islands, where the people are chiefly fisher-folk but are more exposed to south-west gales, the death-rate in the same period was 2·0 per 1000. Staffordshire, in spite of its potteries, being one of the most sheltered counties in England from westerly winds, has one of the lowest death-rates. Even Leeds, Sheffield, Gateshead, and Newcastle-on-Tyne, populous, crowded, industrial, but sheltered from the west, have lower death-rates than Anglesey and Holyhead, which have far less social cause for phthisis but are very exposed. It is obvious, of course, that in exceptional instances of communities, each of almost uniform occupation, the differences in the phthisis death-rates may be considerable on account of occupation. The influence of rainy winds on persons following the same occupation can be observed in the case of coal-miners in England and Wales.

Race.—Race has a very strong influence. The black troops in the West Indies have a death-rate nearly five times as great as the white troops have. But in India the native troops have only about half the death-rate of the white troops.[22] Between white races the differences seem much less marked; thus, in America, Billings finds the ratio between the death-rates of Irish and Germans is as 198·4 to 123·6—i.e., as about 3 to 2.[23] When the difference in race, therefore, is pronounced, as when negroes and white men are compared, its influence is very great, but when white races are compared with each other the influence of race is only moderate.

Preventive measures.—Whilst the extent to which these may locally influence the death-rate is uncertain it seems best in an inquiry of this sort to avoid the very recent figures which they may affect.

Prevalence of other forms of tubercle.—This does not appear to influence the frequency of phthisis but seems in England and Wales to be influenced in much the same way by rainy winds.[24]

Prevalence of other "respiratory diseases." — Other "respiratory diseases" appear not to affect the prevalence of phthisis but to follow quite different laws. In the United States the distribution of pneumonia is almost the converse of that of phthisis and whilst phthisis is commoner there than in England bronchitis is much rarer.[25]

Prevalence of malaria.—There is no evidence that malaria prevalence affects phthisis prevalence to any marked degree, if at all. Both may be prevalent in the same place as in Austria, Italy, Japan, and the coast of Brazil.

Now compare the foregoing with the influence of rainy wind as estimated in Devonshire. It was found that in Devon the phthisis mortality in the most exposed rural district was more than *twice as great* as that in the least exposed, even although these districts were too large to present sharp contrasts of shelter and exposure; in the parishes where the contrasts of shelter and exposure were more marked exposed parishes had *three times* the death-rate of the sheltered when both sexes were considered together and when females only were considered (as less likely than the men to be much out of their own parishes) the exposed parishes had actually, in two different districts, *five times and seven times* the mortality of the sheltered parishes. Compared with so powerful an influence as this soil has a definite influence but a less marked one. Altitude has, *per se*, probably no influence at all. Dry wind has probably little effect. Rainfall has probably none by itself. Density of population, insanitation, and poverty have a definite influence, but less marked. Prevalence of other forms of tubercle, of other respiratory diseases, and of malaria does not appear to have any effect. The influence of exposure to rainy wind therefore appears to have a greater effect in increasing the phthisis death-rate than any other influences except those of differences of race and of occupation—and difference of race must be extreme—and injurious occupation must be almost universal in a community to produce as great an effect as exposure to rainy wind.

I have avoided comparing different countries with each other in order to minimise the error due to race. I have only compared localities of which I have contemporary statistics so as to avoid mistake due to rising or falling phthisis mortality, and I have avoided the very recent period within which preventive measures have been locally adopted. With regard to reliability of statistics some error must always be encountered, but in England, within the last 30 years or so, I believe this error may be practically neglected and that in at least several European countries it will not be sufficient to weaken the arguments founded on the figures. Where statements only are to be relied on I have chosen those places where such statements seemed to be sufficient.

TABLE XXIX.—*Showing the Comparative Mortality Figures of Males between 25 and 65 Years Old in 1890–91–92.*

Tin-miner	508	Engine-maker	195
Lead-miner	380	Woollen-maker	191
Potter	333	Hosiery-maker	190
Copper-miner	331	Shopkeeper	172
Brass-worker	279	Lace-maker	160
Stone-quarrier	269	Shipwright	119
"General labourer"	253	Farm labourer	115
Zinc-worker	240	Fisherman	114
Carpet-maker	226	Coal-miner	97
Building trades	206	Ironstone-miner	90
Cotton-maker	202	Artisan	88
Textile manufacturer	203	Farmer	81

The above are selected from the Supplement to the fifty-fifth Annual Report of the Registrar-General in England, Part. II., p. clxi.

My best thanks are due to those who have been so good as to furnish me with the information on which the foregoing is founded. In a brief preliminary statement it is impossible even to mention many valuable facts which have been brought to my notice or to do any real justice to the help which has been so generously accorded me. I hope ere long fully to acknowledge my indebtedness to others and, at least in some measure, to justify the trouble I have given.

Exeter.

[18] Ibid., p. 970.

[19] See supplement to Thirty-eighth Detailed Annual Report of the Registrar-General for Scotland for the effect of density of population in Scotland.

[20] See Norwegian report already quoted.

[21] Bulstrode: Milroy Lectures, THE LANCET, July 11th, 1903, p. 78.

[22] Dr. Crombie's Report, already quoted, p. 13.

[23] Davidson: Op. cit., vol. ii., p. 848.

[24] See Registrar-General's Returns for England.

[25] Davidson: Op. cit., vol. ii., pp. 859–60.

SOME CLINICAL OBSERVATIONS WITH NEW REMEDIES.[1]

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WHEN I last had the honour of reading a paper before this society on Some Dangers of Hypnotics certain members were kind enough to express a hope that my next contribution would deal with clinical observations concerning some of the new remedies which had been used in my wards or in my private work. The kindly reception of my last paper has encouraged me to attempt to-day to meet this desire and to place before you some observations which, though perhaps fragmentary and inconclusive, may yet, I hope, prove of interest and at least afford material for discussion and for an interchange of records of experience.

The term "new remedies" I employ to include some preparations which are not to be found in the British Pharmacopœia, some which have been introduced since the issue of the current Pharmacopœia in 1898, some which, for aught I know, may never be admitted or may not appear under their present familiar names if they are protected by patent rights. This is not a question which concerns me greatly, the important point being the investigation of their claim to any consideration. It is impossible to wait for this question to be settled by official authority. Our patients look to us for guidance when perplexed with persistent advertisements and we must be in a position to answer their inquiries without delusive evasions. In dealing with new remedies the rule I have followed, and I believe it is the only safe rule, is not to be led into trying the last new remedy without being in possession of full information of its nature and composition. Details of the method of preparation are not so important, but we must know something about a new drug besides the name and the purposes for which the manufacturer deems it may be of service.

The drugs I propose speaking of to-day are the following: uricedin, urotropin, aspirin, mesotan, and ovoferrin or iron vitellin. You will find that my remarks are not necessarily in praise of any of these preparations; while indicating what I take to be the limits of utility I wish also to point out certain dangers or inconveniences which may arise. I hold no brief on behalf of these drugs but wish to tell a plain unvarnished tale of the results I have had with them and at the same time to give some words of warning against their indiscriminate employment. Each and all of these may give rise to trouble. They might almost be compared to dynamite or gunpowder; they are useful if properly employed, hazardous if used unskilfully and recklessly. When the possibility of danger is realised there is comparative safety, but if used without due knowledge great risks may be incurred. We frequently hear that every man is "a fool or a physician by the time he is forty." This is a hard saying, since we know that all men of forty are not legally qualified to practise. Perhaps there is a fallacy in the major premiss, but, however that may be, you will soon see that I should not recommend the employment of any of these drugs by the unqualified public.

Uricedin.—The first drug on my list is uricedin. According to Martindale's Extra Pharmacopœia this is a German speciality which occurs in brownish-yellow granules which are soluble in water. It is said to be prepared from concentrated lemon-juice by treating it with sulphuric and hydrochloric acids, neutralising with soda, adding lithium citrate, and evaporating to dryness. It has, according to the same authority, been recommended for gout, gravel, urinary calculi, articular rheumatism, and uric acid diathesis, and the dose is given as from one to two drachms. The statements that have been made respecting this drug are rather conflicting. It has been said that it imparts to the urine the property of dissolving uric acid; that it exercises no injurious effect upon the stomach; that large doses have only been known to cause a slight relaxation of the bowels; and that it converts insoluble uric acid into the more soluble acid urate of sodium. My clinical observations agree generally with these statements but I should be disposed to lay greater stress upon the laxative action. Several of my patients with chronic gout have volunteered the remark that in the moderate doses which I have employed they have found that an easy satisfactory action of the bowels has been produced. One patient, who had suffered long from gout, expressed more gratitude for the pleasant laxative action than for any relief of pain. In acute gout, both in hospital practice and in private work, it has not given me the same degree of satisfaction, nor have I been able to confirm the statements relative to its value in cases of renal calculus. I have tried it in some cases of migraine but the results have not been encouraging. To judge from some of the recent literature which has been circulated to the medical profession I fear that, despite its pleasant laxative action in chronic gout, uricedin is likely to suffer in general estimation on account of exaggerated claims for its employment. It does not inspire confidence to find that it is recommended that its use should be "persevered with for a long time—perhaps even for years."

Urotropin is almost too familiar to need formal introduction but for the sake of consistency it may be well to remind you that it rejoices in the somewhat ponderous chemical name of hexamethylenetetramine and that it is prepared by combining ammonia and formaldehyde. Martindale states that it consists of colourless crystals with an alkaline reaction; it is easily soluble in water, less so in alcohol, and almost insoluble in ether. It is further stated to be a valuable diuretic and solvent of uric acid concretions, to relieve cystitis associated with incontinence of urine, and to destroy typhoid bacilli in the urine. There is, however, one word of warning—viz., that it may cause hæmaturia unless well diluted. The dose is given as from five to 15 grains. On looking into the literature connected with urotropin I have been sorry to find that the list of its misdeeds has been considerably increased. It has been held to be responsible for producing the following symptoms: irritation of the stomach, diarrhœa, abdominal pain, a measles-like rash, renal irritation, albuminuria, strangury, and irritant action on raw surfaces in the urinary passages and hæmoglobinuria. These actions have been said to be due to special susceptibility to formaldehyde, to interference with the usual disposition of formaldehyde in the body, or to the liberation of an unusually large quantity of it. Some two years before these suggestions were made Cammidge maintained that the liberation of formaldehyde did not occur within the body, that the urine of persons taking 30 grains of urotropin a day did not contain formaldehyde, and he suggested that the antiseptic properties might be due to the formation of new urotropin compounds.

My experience with urotropin in private work has been far greater than in the wards, since many patients for whom the drug might be employed are scarcely sufficiently ill to require ward treatment. At the outset let me say that the long catalogue of ill-effects has not come within my experience; in only one case has there been complaint of slight lumbar pain, and although at the time I did not feel satisfied that it was due to the urotropin it certainly ceased when the drug was discontinued. I am inclined to attribute this freedom from unpleasant symptoms to the fact that I have invariably given instructions that the powder should be taken in at least five ounces of water and have generally employed Contrexéville water for this purpose. The cases in which I have given urotropin have been of varied nature; the general indication has been the presence of pus in the urine, whether resulting from irritation of the renal pelvis by calculi or by crystals of uric acid, or when associated with offensive conditions from the presence of micro-organisms. I would not venture to say that this treatment has sufficed to dissolve uric acid concretions—indeed, in some of my cases subsequent surgical operations were required; but, on the other hand, I would affirm that in every case I have found that the urine speedily lost its offensive character and that there was generally a rapid decrease in the amount of deposit. Further, I can say that those who had hitherto been passing quantities of sand lost this trouble during the treatment; this improvement may, however, have been due to the increased quantity of liquid consumed rather than to a specific action of urotropin. In leaving this drug I would venture to suggest that should undesirable symptoms arise during its administration it would be well to ascertain whether it has been taken in accordance with instructions before too hastily discarding it in favour of some other line of treatment.

Aspirin.—This drug has been regarded as acetyl salicylic

[1] A paper read before the Therapeutical Society on Dec. 20th, 1904.

acid or salicyl acetic acid. It is a fine white crystalline powder, sparingly soluble in water, and is given in suspension, in cachets or in compressed form. It has been used as a substitute for salicylic acid and the salicylates. My experience with this remedy is comparatively limited and I do not desire to come into conflict with those of more extended experience. Having tried it in several cases of acute rheumatism I have not been convinced that for this purpose it possesses any advantage over salicylic acid or the salicylates and have returned to their employment. In some patients dyspeptic symptoms followed its use in addition to very profuse perspiration; the former symptoms have sometimes been accompanied by some diarrhœa which has sufficed to produce a strong disinclination to continue the use of this remedy. The cases in which I have found it to be of most service are those of severe headache occurring as the result of overwork or over-anxiety, especially when there are evidences of a gouty diathesis. Under these conditions I have frequently found that a dose of ten grains before going to bed has produced free perspiration, which has been followed by relief of pain and by refreshing sleep. I have also used aspirin for migraine but although it has occasionally been of service it has often failed. From the perspiration it induces I never give aspirin unless the patient is on the point of going to bed.

Mesotan.—This is a yellow liquid, almost odourless, or with a slight aromatic odour. It is the methoxy-methyl ester of salicylic acid. It is insoluble in water, soluble in alcohol, and readily miscible in olive oil. It is readily absorbed by the skin, salicylic acid being found in the urine shortly after its local application. It is stated to have been used with excellent results in all forms of rheumatic and gouty affections. In my hospital work mesotan mixed with one or two parts of olive oil has appeared to afford relief in the after-treatment of acute rheumatism. It has not been of any service during the continuance of the fever, but after the fall of temperature many of my patients have said that they have quickly lost pain and stiffness in their joints with the local application of mesotan. While fully aware of the possible fallacy of such observations I have been struck by their unanimity, which can scarcely be a coincidence. In some cases of gonorrhœal rheumatism mesotan has not given the slightest relief and in one such case well-marked local irritation followed its use. At the time I was inclined to think the patient had been too energetic in his desire to rub in a quantity, but I have since seen it stated that this result has been observed by others, when after the application of mesotan the limb has been surrounded with an impervious covering, while another suggestion is that the irritation is due to admixture with water and decomposition of the mesotan. Both points are noteworthy as they supply hints for directions. Mesotan should be free from water; it should not be used without dilution with olive oil, it should be applied with a brush without friction, and the surface should not be subsequently covered with thick flannel, cotton-wool, or protective tissue.

Ovoferrin or iron vitellin.—Some present may remember that in a paper on the Treatment of Some Forms of Anæmia[2] I recently gave the results of some observations with this substance. I may, however, state here that this substance is produced by heating together under pressure solutions of serum albumin and iron tartrate; the resulting precipitate is freed from impurities and supplied in solution with just enough alcohol to check decomposition. The dose of this solution is from two fluid drachms in an ounce of water three times a day. In this paper, after mentioning the general objections to many of the official forms of iron and its compounds and the various efforts to obtain a true organic iron preparation, I gave details of some investigations which had been conducted in my wards with ovoferrin. The general principle was first to estimate the percentage of hæmoglobin in the blood and to make subsequent estimations at intervals of a week during the administration of the new remedy. For the details I would venture to refer you to my paper but the conclusions I would like to summarise here. The hæmoglobin in most cases increased markedly within a short time and synchronously there was great improvement in digestive power and in general well-being. The most satisfactory features were the readiness with which the remedy was taken, owing to its pleasing appearance and its absence of taste, the cheering rapidity of the improvement, and the total absence of any digestive disturbance or constipation as a consequence.

I am tempted to refer once more to this subject since further experience has not weakened the views then expressed and I am able to say more of one of the cases which did not then afford full satisfaction. In a case of pernicious anæmia we watched a rapid reduction of hæmoglobin with considerable anxiety and finally gave liquor arsenicalis in addition to the ovoferrin. When my paper was written the hæmoglobin had risen from 25 to 30 per cent. and in spite of this small proportion it was noted that the aspect had improved very materially. The hæmoglobin increased from this date (June 20th) until by July 19th it had reached 64 per cent.; at this time 15 minims of liquor arsenicalis were being given three times a day. This dose produced keratosis of the palms of the hands and some smarting of the eyelids, together with loss of appetite and abdominal pain. The arsenic was accordingly stopped and it is interesting to note that although there was a subsequent slight fall in the percentage of hæmoglobin the general condition remained satisfactory.

And now for the word of warning connected with this preparation. Do not forget that this organic preparation of iron only contains sufficient alcohol to arrest decomposition when undiluted and that it should therefore only be mixed with water at the time when it is taken; neglect of this simple precaution is likely to produce disastrous results.

In conclusion I would like to repeat that I am well aware of the numerous sources of possible fallacy inseparable from any attempt to determine the value of remedies from clinical observations. These risks are necessarily greater when investigating remedies used for the relief of pain. I have endeavoured not to fall into this pitfall and have used guarded terms in such circumstances. On the other hand, there can be few such risks when clinical reports can be supplemented by definite changes like the amount of pus in the urine or the percentage of hæmoglobin in the blood.

Harley-street, W.

[2] The Practitioner, August, 1904.

HÆMORRHAGIC TYPHOID FEVER.

By DAVID BLAIR, M.A., M.D. GLASG.,
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SEVERAL cases and articles bearing on this distinctly rare condition have appeared in the columns of THE LANCET. I refer especially to two contributions by the late Dr. T. J. Maclagan on the Relation of the Bowel Lesion of Typhoid Fever to the General Symptoms of the Disease,[1] a joint article by Dr. A. G. Nicholls and Mr. G. Everett Learmouth of McGill University on the Hæmorrhagic Diathesis in Typhoid Fever and its Relation to Purpuric Conditions in General,[2] and the description of a case at St. George's Hospital, under the care of Dr. W. Ewart.[3] In connexion with these the following case and suggestions may be of some interest.

A woman, aged 24 years, was admitted to the asylum on July 12th, 1895. She had earned her living as a charwoman. Since the age of 14 years she had been subject to epileptic fits and had two or three per diem. She was somewhat addicted to drink. When admitted she complained of having suffered from various mysterious maladies and said that she had had a tumour in the side for which she had undergone an operation. She was violent, excited, and had delusions of persecution. Physically she was well nourished but very anæmic. During the whole of her year's sojourn at the asylum she was hypochondriacal, fretful, quarrelsome, and hard to manage. She complained of a pain in her left side, of which there was no physical sign, and insisted on wearing a plaster and bandage over it. Now and again, especially when one happened to be looking, she would gasp, catch her breath and throat and appear to be troubled with something of the nature of globus hystericus. Despite her many drawbacks she was a useful worker in the wards.

On July 2nd, 1896, her bodily health was reported to the

[1] THE LANCET, Dec. 8th, 1900, p. 1639, and Jan. 12th, 1901, p. 93.
[2] THE LANCET, Feb. 2nd, 1901, p. 305.
[3] THE LANCET, July 6th, 1901, p. 25.

Commissioners in Lunacy as good. She took her food well and continued her work until the 16th. On that morning she took part in the usual scrubbing but later was reported not to have taken her breakfast and to be passing blood per rectum. I found her pulse-rate to be 140, her respiration 44, and her temperature nearly 105° F. She looked drowsy and ill and complained of pains all over the body. She was frequently purged during the day while some of the stools seemed to consist of nothing but blood. Apart from the rapidity of the heart and respiration, physical examination of the chest revealed nothing abnormal. There was no rash and no enlargement of the spleen could be felt. On the 17th her temperature was 105·0° in the morning and 104·0° in the evening. On the 18th it was 103·0° in the morning but was brought down to 101·6° in the afternoon by sponging with tepid water and vinegar. On the 19th it was 103·0° in the morning and 104·8° in the evening. On the 20th a considerable increase in the tumescence of the abdomen was noted; the urine, which had been carefully drawn off with the catheter, was found to contain blood, while petechiæ had come out on the legs and arms. At the bases of both lungs râles were now audible, bronchophony was well marked, while there were small areas of tubular breathing. On the 21st her temperature was 105·0° in the morning and 104·0° in the evening. On the next day there was considerable epistaxis while blood was also shed from the gums. At night the patient had one fit and was purged three times, pure blood being passed on each occasion. On the day following (i.e., July 23rd) she had six fits and died in the evening at 6 o'clock; her temperature was 100·2° in the morning and 103·6° in the afternoon.

The clinical history of this case might have been presented by three well-known and distinct morbid entities: purpura hæmorrhagica, that form of ulcerative colitis known as "acute diphtheritic dysentery," and "latent typhoid fever." Of these, idiopathic purpura seemed the least probable. Hæmorrhage from the bowel preceded and relatively exceeded the hæmorrhage from any other mucous membrane. And while in this affection, as in all other forms of extreme anæmia, fever may be present, yet it seems very doubtful if it ever occurs as an initial symptom. It appeared more probable that the purpura was only symptomatic and a complication of either dysentery or typhoid fever.

My late colleague, Dr. J. F. Gemmel, in his work on Dysentery, argues that there is a much closer connexion between purpura, scurvy, and dysentery than is at present recognised. Dysentery is, oddly enough, a somewhat common affection in large asylums. But all the cases which I have seen were either afebrile or became so after the first day or two. There is, however, a type of ulcerative colitis described by Osler from which it is practically impossible to differentiate this case. I refer to acute diphtheritic dysentery, in which the patient from the outset is extremely ill with high fever, great prostration, pain in the abdomen, and frequent discharges. Delirium may be early and the clinical features are practically identical with those of severe typhoid fever. Osler says that he has known this to be mistaken for typhoid fever again and again, but that the absence of enlargement of the spleen and of the rose rash ought to lead to a correct diagnosis. Both of these were absent in this case, while the early appearance of the blood was much more characteristic of dysentery than of typhoid fever. I was quite aware that early signs of typhoid fever were sometimes latent and that cases were recorded of the first indication of the disease being perforation of the bowel. But up to then I had never read, or even heard, of any case of typhoid fever in which hæmorrhage was the earliest clinical indication.

A post-mortem examination was allowed and the more salient appearances were as follows. There were cutaneous hæmorrhages of from the size of a shilling to that of a half-crown on the forearms and legs. The body seemed to be well nourished, but this was due to a large layer of fat. Apart from a slight general paleness due to anæmia the brain was healthy. The heart muscle was anæmic and atheroma was beginning in the aorta. The bases of both lungs were congested and there were patches of consolidation and œdema of other parts. The mesenteric glands were large, soft, and reddish. The lower 18 inches of the small intestine showed extensive ulceration of Peyer's patches and several of the ulcers had penetrated right down to the peritoneal coat. The ulcers were typical of the third stage of enteric fever and they stopped abruptly at the ileo-cæcal valve. The spleen was acutely congested and weighed six and a half ounces. The kidneys were fairly healthy but they, too, weighed six and a half ounces each.

The disease, therefore, was obviously one of those extremely unusual types of typhoid fever exhibiting the hæmorrhagic diathesis. It is extremely rare. In Ouston's 6513 cases of typhoid fever there were only four and in Osler's 829 cases there was only one.

The most remarkable feature of the case I have described was the latency of the early symptoms of the disease and at the first blush we were tempted to ascribe it to the patient's abnormal mental state. Disturbed mental conditions sometimes completely mask physical disorder. Patients are occasionally brought to the asylum as cases of melancholia or mania who on being carefully examined are really found to be suffering from typhoid fever. The sensibility of the insane to physical discomfort may be both blunted and perverted and it is obvious that a patient could hardly suffer so persistently from epilepsy for 12 years without acquiring some degree of dementia. But the fact remains that typhoid fever in the insane runs, as a rule, the same course and presents precisely the same symptoms as in the sane. And one can hardly imagine any psychosis which could regulate a temperature, avert diarrhœa, or suppress a typhoid fever rash.

I think, however, a sequence of pathological conditions which would account for this clinical history is quite intelligible apart from mental phenomena. If we take it that the bacilli first entered the body by ingestion, we may regard the initial intestinal lesions as infective granulomata produced like the products of tubercle by the local action of the specific bacillus. During the period of invasion we can easily imagine the morbid action to be limited entirely to Peyer's patches and the closed follicles without any material absorption into the system of the bacilli or their spores; and so the intestinal lesions might smoulder on for some time without giving rise to any very marked bodily symptoms. When, however, the stage of ulceration was reached, with erosion of vessels, profuse hæmorrhage, and the discharge of the poison into the bowel, an absorbing surface and absorbent toxins of a vastly different character would be presented and auto-infection might rapidly take place. Nor would this absorption necessarily be limited to Eberth's bacilli and their spores. We know that in a necrotic and ulcerative condition of the bowel with sloughs partially adherent, septic and pyæmic mixed infection starting from the ulcers would most likely be superadded. Such, I think, is a very reasonable interpretation of the morbid phenomena underlying the clinical appearances.

As to treatment it was, of course, purely symptomatic. But in the last few days when absolutely nothing was retained by the stomach and rectal feeding was out of the question really good results for a time were got by feeding hypodermically with a mixture of salt solution and white of egg.

Lancaster.

INJURIES TO THE EYE BY PENETRATING FOREIGN BODIES AND THE RESULTS AFTER MAGNET OPERATIONS.[1]

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IT has of recent years become a matter of everyday occurrence that chips of metal are extracted from the interior of eyes into which they have penetrated as a result of an accident. That this is so is largely due to the use of electromagnets (large and small) and also to the localising power of the x rays. Cases are frequently recorded in which pieces of metal have been removed from the eye, but there is a much larger percentage of such cases in which there is no record except in the journals of a hospital. Unfortunately, however, although the total number of cases in which metal penetrates into the eye is large, and the proportion of these in which the metal is successfully removed is every year becoming larger, there is nothing to show in what percentage of the latter the eye preserves

[1] A paper read before the Southern Medical Society, Glasgow, on Dec. 15th, 1904.

useful vision. Of course, in considering this subject such simple cases as those in which the metal is small and is lying in the anterior part of the eye (the anterior chamber, the iris, and the lens) must be excluded. It is probable that of those cases in which the metal has penetrated into the vitreous body and has been extracted by the electro-magnet, the proportion in which the eye thereafter recovers or retains useful vision is very small, probably not 5 per cent. In a paper which I communicated to the Congress of Ophthalmology at Lucerne in 1904 I showed that of 1000 eyes excised in the Glasgow Eye Infirmary 244 were lost in consequence of an injury by a chip of metal. This number is small compared to the total of cases in which the eye was injured to a serious extent but not excised, however, but it is difficult to say at all accurately in what proportion of the latter metal had been extracted by the electro-magnet.

In the great majority of cases in which eyes are excised after injury it is found that inflammation of the ciliary body is the cause of the destruction; in the remainder the eye is lost in consequence of intra-ocular hæmorrhage. Now we may take it as an accepted fact that cyclitis in such cases is due to either infection by micro-organisms conveyed into the eye by the metal or some other means or to the formation of an irritant in the eye as the result of chemical action on the metal. If, then, the irritant is the result of such chemical action, even in a small proportion of the cases, manifestly the sooner the metal is removed the better. It is perfectly true that in certain cases metal has remained in the eye for many years and has done but little damage. This is so, of course, because the foreign body has become encapsuled and the products of chemical action pass not into the vitreous body but into the general circulation. In a vastly larger proportion of cases the presence of a chip of metal does irreparable damage to the eye in which it is lodged. There is, then, a good argument for attempting the extraction of chips of metal if it can be shown that even in a few cases out of every hundred eyes from which metal is extracted the organ preserves useful vision. Three cases in which this has been the result have come under notice and a short account of each is given here.

CASE 1.—A girl, aged 19 years, was seen on Dec. 25th, 1903, as she had received a blow on the right eye from something whilst "pulling a Christmas cracker" the previous evening. There was a large wound at the upper part of the ciliary region of the right eye. It was radially situated, was very ragged, and allowed of prolapse of both iris and ciliary body. As it was suspected from the appearance of the wound that there was a foreign body in the eye the point of a large electro-magnet was brought close to it and at once a large shining body came to the surface and was easily seen through both the pupil and the wound. A small magnet was then used but though the metal rose to it well it could not be induced to come out through the wound owing to its large size. Ultimately, after considerable enlargement of the wound and with the aid of the large magnet again a piece of tin-plate measuring a quarter of an inch square, much curved, and with very ragged edges was removed from the eye. The appearances were so bad that no hopes were entertained of saving the eye, but nevertheless the edges of the wound were carefully trimmed. The eye was dressed "cold" and atropine was used freely. The subsequent history of the case was that of a very successful cataract extraction. The wound healed wonderfully quietly and well, especially considering its situation and the amount of disturbance to which it had to be subjected. There was no iritis, the iris remaining mobile though its torn edge was still adherent to the wound. The lens had been injured and dissolved quietly away, its solution being aided on two occasions by a gentle discission. Now, after nearly a year, the girl can see with suitable glasses absolutely perfectly up to the normal standard, $\frac{6}{6}$, and the very finest print.

There are several points of special interest in connexion with this case, the first being the cause of the injury. When the electro-magnet was tried it was only with faint hope of success as, so far as was known, there should be no metal in the composition of a "cracker." The fact that in some of these objects for the entertainment of children there is metal shows that they are not such safe things to put into the hands of a child as was formerly thought. The position of the metal in a "cracker" is interesting and instructive. The explosive part consists of two strips of paper coated probably with chlorate of potassium and a little sand and it is by drawing the strips quickly past one another that the explosion is caused. Formerly the strips were held in apposition by a binding strip of paper but in the "cracker" which was used in this case the strips were held together by a piece of tin-plate lapped round them in such a manner that the explosion took place in the fold of the tin. In one of the "crackers" fired as an experiment the tin was burst open so violently that a portion of it passed out through the paper wrappings and went eight feet across a room. It may be said here that the name of the maker of the cracker could not be discovered. In another way, however, the case was particularly interesting and important. As the case was regarded as practically hopeless from the first a very grave prognosis was given to the family medical attendant and parents, indeed it was considered probable that the eye would have to be sacrificed in order to save the other. Nothing was left undone, however, to save it and the manner in which the wound healed in spite of adverse circumstances was little short of miraculous. There is now no fear for the eye, which preserves almost the natural appearance as the coloboma is upwards, a fact specially fortunate in the case of a woman.

CASE 2.—The next case is that of a man, aged 40 years, who in August, 1891, got a chip of metal into his right eye whilst working at a vice. He came to the Eye Infirmary at once where it was found that there was a large wound of the eye at the upper part of the cornea with laceration and prolapse of the iris and lens. As it was suspected that there was metal in the eye the point of an electro-magnet was introduced through the wound and pushed down and backwards for three-quarters of an inch. At this distance it was moved about a little and a sharp "click" was heard denoting the presence of a chip of metal of considerable size. When the magnet point was withdrawn the metal was adhering to it. The metal measured a quarter of an inch in its longest and one-eighth of an inch in its shortest diameter. The remains of the lens were drawn off and the edges of the iris were trimmed and replaced with great care. Atropine was freely used and the eye was dressed "cold." After a small operation, with the object of breaking up the capsule of the lens and an iridectomy to make a pupil free from the corneal scar, the eye could see with a suitable glass in January, 1901, nine years after the accident, $\frac{6}{9}$ and "time on a watch."

CASE 3.—A man came to the Eye Infirmary in June, 1904, having received a blow in the right eye whilst at work 24 hours before. There was a small wound in the ciliary region at the nasal side of the cornea but no prolapse of contents. As the wound penetrated the sclera it was thought probable that there would be metal in it and the point of the large magnet was brought close to the eye but no pain was experienced. The point of a small magnet was then introduced through the wound and at a distance from the surface of half an inch a chip of metal was found and extracted. Considerable reaction followed and there was much effusion of both inflammatory material and blood into the eye. After a month, however, the eye became quiet and the tension, which had been below the normal, rose again. Three months after the accident the man could see with this eye nearly $\frac{6}{9}$ and as the blood clot in the eye was absorbing well it is confidently expected that still further improvement will take place.

These three cases, then, show that what may be called useful vision may remain after the extraction of a chip of metal of considerable size from the eye. It is, of course, a matter of the greatest importance that the patient should be seen at as early a date after the injury as possible. The use of the magnet is not difficult to learn, but it requires a little confidence to push the investigation far enough in some cases. The greatest care must be taken that the point of the magnet is sterile, of course, and all other precautions usual in surgery must be carried out with care; and, lastly, every form of treatment which ophthalmic medicine indicates should be used to prevent the occurrence of iritis and cyclitis.

Glasgow.

GLOUCESTER COUNTY ASYLUM.—At a recent meeting of the Gloucester county council it was decided to extend the county asylum at Barnwood by the erection of two blocks for epileptic patients at an estimated cost of £4000. It is proposed to erect one block for female patients shortly; the remaining one, for male cases, is to be built later.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

TWO CASES OF CONGENITAL MORBUS CORDIS WITH ATRESIA OF THE PULMONARY ARTERY AND OTHER DEFECTS.

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THE following two cases are examples of congenital morbus cordis with atresia of the pulmonary artery and other defects.

CASE 1.—The patient, who was a female child, aged three months, suffering from hare-lip and cleft palate, was admitted into the North-Eastern Hospital for Children for operation. The mother had several other children, all of whom were quite well, and there was no history or sign leading to the suspicion of a syphilitic taint. The patient, usually of a natural colour, was, however, subject to attacks of dyspnœa with cyanosis. Clubbing of the fingers or toes was absent and no heart murmur could be detected. The child died suddenly before any operation could be undertaken.

A post-mortem examination revealed the following state of the heart. The lumen of the pulmonary artery at its origin from the right ventricle and for nearly half an inch beyond was completely obliterated, the artery being represented by a firm fibrous cord; beyond this point the lumen became evident and expanded into a rather narrow but otherwise normal pulmonary artery. The cavity of the right ventricle was dilated and its walls were hypertrophied. The aorta, which was enlarged, arose from both ventricles but chiefly from the right. The interventricular septum was deficient at its upper part and the auricular septum was also incomplete. This specimen was exhibited at a meeting of the Society for the Study of Disease in Children in November, 1904.

CASE 2.—The patient was a child, six months old, who had been cyanotic since birth. There were three other children in the family, all of whom were healthy and no history of syphilis could be obtained. The only abnormal physical sign connected with the heart was a systolic murmur heard all over the præcordium but most distinctly in the position of the apex beat. Death took place from bronchitis and œdema of the lungs.

The condition of the heart found at the necropsy was as follows. There was no direct communication between the cavity of the right ventricle and the lumen of the pulmonary artery; this vessel commenced blindly at the upper part of the anterior wall of the right ventricle; there was no trace of the pulmonic semilunar valves. The cavity of the right ventricle was abnormally small and its lowermost part was rounded; the walls were enormously thick (considerably thicker than those of the left ventricle), especially towards the apex of the heart, where they measured nearly three-quarters of an inch through. The right auricle was very much dilated and its walls were somewhat hypertrophied; the foramen ovale was patent, admitting the tip of the index finger. The aorta, which was larger than usual, communicated with the pulmonary artery by means of the patent ductus arteriosus.

In the English and continental literature of the last ten years to which I have had access I have found only three cases of complete closure of the pulmonary artery recorded; one of these was reported by Dr. R. J. Probyn-Williams[1] and the other two are described by Dr. G. Carpenter.[2] Cade[3] reports a case in which the pulmonary artery was absent, its place being taken by a vessel which arose from the concavity of the arch of the aorta and divided into two branches which passed to the lungs.

For the clinical abstracts I am indebted to Dr. R. M. Im Thurn and Dr. Powell of the North-Eastern Hospital for Children and my thanks are due to Dr. W. A. Wills and Mr. E. C. Stabb for permission to publish these cases.

Devonshire-street, W.

[1] Transactions of the Obstetrical Society of London, vol. xxxvi., 1894, p. 3.

[2] Congenital Affections of the Heart, 1894, pp. 27–28.

[3] Lyon Médicale, vol. lxxxvi., 1897, p. 155.

A CASE OF SUDDEN AND FATAL ILLNESS WITH UNUSUAL SYMPTOMS.

BY HAROLD WARD EVANS, M.R.C.S. ENG., L.R.C.P. LOND.

THE following case will probably be of interest on account of its sudden onset and extreme severity. At about 10 P.M. on Dec. 18th, 1904, I was asked to see a girl, aged 13 years, who was supposed to be in a fit. On arriving at the house I found the patient suffering from a most severe attack of chorea. She was surrounded by a group consisting of her mother and some neighbours who were endeavouring to hold her still, being afraid that in the violence of her movements she might break one of her limbs. The mother stated that on the previous day the girl was perfectly well until the evening. She had been in bed and asleep for over an hour when her mother, hearing her call out, went into the room and found her in what she thought was a fit, throwing herself about the bed and wildly jerking her limbs. She also complained of pain in her right leg but this soon passed off. I was not able to gather exactly how long this attack lasted but I should judge that it continued for about half an hour; the girl then went off to sleep for the rest of the night. In the morning she seemed much better and got up. She ate well, played about, and even helped to wash up the tea-things. On questioning the mother closely, however, I found that all day she had noticed occasional twitchings of the girl's face accompanied by jerky movements of the arms and the legs. At about 8 P.M. on that day—namely, Dec. 18th—she was again seized with the violent choreic movements and on my arrival at 10.30 P.M. was in the state which I have described above. With great difficulty I listened to her heart but could hear nothing abnormal. This condition of most violent choreic movements, during which the girl did not keep still for a moment, lasted until about 1 P.M., on the 21st when she suddenly became absolutely quiet, gradually sinking and dying at 5 P.M. So violent were the movements that the skin over the legs, the elbows, and the backs of the arms was rubbed quite raw. The child managed to take nourishment well up to the morning of the day of her death but she had had practically no sleep since the night of the 18th. The treatment consisted of abundant fluid nourishment with four-minim doses of Fowler's solution and five grains of bromide of potassium.

I have no reason to doubt the mother's statement as to the suddenness of the attack, though I find that the father had noticed a slight twitching of one shoulder for two or three days previously. On Dec. 15th I was at the house seeing a younger brother who was suffering from a slight attack of bronchitis and I then saw the little girl playing about apparently quite well. Could fright have been the cause of this attack? I find that the child had had two definite attacks of fear. The first occurred one night in the previous week when her younger brother with whom she was sleeping had a violent fit of coughing, both she and her mother fearing that he was choking with the phlegm. The second occurred on Dec. 16th in the following circumstances. She had gone to the house of a neighbour, who was bringing back the medicine for her brother. This woman has an epileptic girl who is a gibbering idiot and apparently the two children sat and stared at each other until the mother of the epileptic appeared with the medicine. When asked by her father on the night of Dec. 18th whether she had been frightened she mentioned this epileptic's name.

Littleport, Cambridgeshire.

A CASE OF PERNICIOUS ANÆMIA SHOWING MARKED IMPROVEMENT UNDER ARSENIC AND BONE MARROW.

BY JOHN BRUNTON, M.B. GLASG., M.R.C.S. ENG.

THE treatment of pernicious anæmia affords so many depressing experiences that it may be of interest to record a case of more hopeful significance. The patient, a woman, aged 55 years, first came under observation in October, 1903.

She was then confined to bed with extreme weakness and according to her statement had been gradually losing strength for about two years. The diagnosis presented no difficulty. The lemon-yellow tint of the skin, the extreme pallor of the mucous membranes, the œdema of the legs, the retinal hæmorrhages, and a temperature ranging irregularly from 97° to 102° F. left no room for uncertainty and the examination of the blood supported the diagnosis. After treatment for a week with small doses of Fowler's solution the case was seen in consultation with Dr. C. O. Hawthorne. A very grave prognosis was unavoidable as the patient was in a most feeble condition and it was suggested that bone marrow should be tried. This was given at first in the fresh state and afterwards as tablets of bone-marrow extract. The effect was very striking. In the course of a month the severe character of the symptoms had been very favourably modified and after three months' treatment there was little to show that the patient had been seriously ill. Unfortunately, in May, 1904, there was an attack of pleurisy with congestion at the base of each lung and from this time the patient was quite unable to retain arsenic in whatever form presented. Gradually the former symptoms returned and she died somewhat suddenly near the end of July.

The interest of the case centres in the fact that even after the patient seemed quite beyond hope she improved under treatment to such an extent that she enjoyed some six months of comfortable and relatively active life.

Endsleigh-street, W.C.

A Mirror of HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quampluimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

LONDON TEMPERANCE HOSPITAL.

TRAUMATIC HYDRONEPHROSIS AND TRAUMATIC PLEURAL EFFUSION; ASPIRATION OF BOTH EFFUSIONS; RESECTION OF RIB; RECOVERY.

(Under the care of Sir WILLIAM J. COLLINS.)

FOR the notes of the case we are indebted to Mr. J. S. Hosford, surgical registrar.

A boy, aged 13 years, was admitted into the London Temperance Hospital on May 23rd, 1903. He had been riding behind a cart and slipped off, when a passing omnibus ran over his abdomen. On admission, though suffering from shock, he was conscious and complained of great pain and tenderness on the left side of the abdomen in the ilio-costal space. He was well nourished, the skin was swarthy, and there was ecchymosis of the skin forming a broad band stretching from the left ilio-costal region to the right hypochondriac region. On palpation there was great tenderness over the left renal region but no swelling or abnormal dulness was detected. He easily passed urine, which was free from blood but contained a little albumin. There was no evidence of fracture of the ribs.

For the first three days after admission the temperature was above 100° F. and the amount of urine was less than a pint a day. On May 27th the temperature rose to 102°, the pulse was 120, and he had pain over the left side of the chest and there were marked tenderness and some resistance in the left hypochondriac and lumbar regions. On the 31st the temperature was over 103°. There were dulness and tubular breathing over the lower half of the left chest. The amount of urine had been 50 ounces a day. There was more defined swelling in the left renal region and the stomach note was loud between this and the dull thoracic area. (The question of traumatic hydronephrosis or ruptured spleen, complicated with pleural effusion, was discussed by Sir William Collins.)

On June 11th the exploring syringe drew sanious serum (sweet) from the seventh left space in the mid-axillary line. On the 12th, under chloroform, Sir William Collins inserted an aspirator in the left ilio-costal space and drew off eight and a half ounces of sweet mauve-coloured acid fluid of specific gravity 1012. On the 19th the amount of urine had been about 30 ounces a day. The temperature was rather hectic in type. The left chest was aspirated in the sixth space and 30 ounces of sanious fluid were withdrawn which spontaneously coagulated. On the 26th, under chloroform, Sir William Collins resected two inches of the left sixth rib, evacuated several ounces of pus from the left pleura, and inserted a tube. No return of the lumbar swelling appeared and the amount of daily urine increased to from 35 to 50 ounces. On July 12th a small collection of pus was found and opened at the left base posteriorly.

The boy had undergone considerable emaciation since admission but from this time forward he began to put on flesh and the chest symptoms gradually resolved. He gained a stone in weight during August. The tube was left out on Sept. 15th and he was discharged to a convalescent home on Oct. 7th. He has since presented himself for examination and is fat and well, the chest shows no abnormal signs, and there is no abdominal swelling to be felt. The urine and the temperature were normal.

Remarks by Sir WILLIAM COLLINS.—In this case trauma of the left hypochondrium, without fracture of the ribs, led to the effusion of two distinct and different collections of fluid, one above the diaphragm pleural in situation and becoming purulent, the other below the diaphragm, acid, of renal origin and disappearing after one aspiration. This latter collection I regarded (after dismissing the possibility of ruptured spleen) as one variety of "traumatic hydronephrosis," such as I described fully in 1892.[1] Probably the case was not merely one of hydro-renal distension from ureteral blockade, but the collection might have been in part external to the renal capsule and circumscribed by the perirenal fat.

BRADFORD ROYAL INFIRMARY.

TWO CASES OF HERNIA OF THE CÆCUM.

(Under the care of Mr. W. H. HORROCKS.)

FOR the notes of the cases we are indebted to Dr. F. W. Schofield, house surgeon.

CASE 1.—The patient, a man of medium build, aged 42 years, a mechanic, was admitted to the Royal Infirmary, Bradford, as an emergent case, on May 30th, 1904. He complained of a rupture on the right side which was giving him severe pain. It came down in the early morning and he had not been able to reduce it. He had had the rupture for five or six years. The cause of it was not known. It had come down every morning when he got up and had gone back at night when he lay down. He had not worn a truss. During the six weeks previous to admission he had pain from the rupture which prevented him doing his work. He had not had any trouble from it before this. His previous health had been good. He had never been troubled with a cough and there was no history of any injury. The hernia was a complete scrotal hernia on the right side of about the size of the closed fist. There was an impulse on coughing; manipulation was painful, and the rupture was not reduced at once. It went back soon after an icebag had been applied when he was in bed. The inguinal ring was very patent. Radical cure was performed. The sac wall was found to be very thick. The sac was continuous with the tunica vaginalis. On opening the sac the upper part was found to contain the last part of the ileum and the commencement of the cæcum. This part of the gut was adherent to the back of the sac. The sac was cut across and the upper part was reduced with the attached gut.

CASE 2.—The patient, a man, aged 52 years, was admitted to the infirmary on May 5th 1904, complaining of rupture on the right side, giving him pain when he lifted things and when he walked long distances. He said it had been down for three months without going back. He had been ruptured for 14 years. During the last 12 months he had a cough and this caused pain in the rupture. He had had a fractured thigh 16 years ago. The hernia was large right-sided scrotal with a distinct impulse on coughing. There was a tympanitic note on percussion. The external ring was of large size. The hernia was easily reduced but very readily came down when the patient coughed. He had a long prepuce. Operation was performed on May 10th, 1904. On opening the sac, the wall of which was very thick, it was found to contain the cæcum, appendix, and lowest piece of

[1] Brit. Med. Jour., April 30th, 1892.

the ileum. The cæcum was covered in front and at the sides by the thickened hernial sac. The cæcum had no mesentery but was attached by a thick fleshy pedicle to the back of the canal. From the lower part of the cæcum a fleshy band covered by tunica vaginalis descended to the upper part of the testicle. The upper part of the sac after being sutured was reduced with the gut. The testis was removed. The inguinal canal was closed by buried sutures. Both patients made uninterrupted progress and were discharged cured.

Remarks by Mr. HORROCKS.—The reports of these two cases well illustrate the two kinds of cæcal hernia described by Scarpa. In the first the presence of the cæcum is accidental. It has no special vascular connexion with the hernial sac and beyond the facts that the sac is usually thicker and the cæcum and appendix more liable to form peritoneal adhesions it does not differ from an ordinary enterocele. In the second case the vessels to the cæcum run in behind the cæcum and any attempt to separate them is liable to cause gangrene of the gut. The broad fold connected with the testis suggests the descent of the testicle as a cause of the low position of the cæcum. In both cases there was a well-marked hernial sac but in the second case this was deficient behind and below, the cæcum being sessile. The treatment of these varieties of cæcal hernia differs. In the first case, "accidental cæcal hernia," the ordinary methods of radical cure are effectual. In the second case the treatment is castration and separation of the fleshy tissues at the back of the sac and reduction of the cæcum. The inguinal canal may then be obliterated by several stitches through the fibres of the transversalis and oblique muscles. In a case recorded by Sir F. Treves[1] this method was adopted. The object of these remarks is to draw a clear distinction between these two kinds of cæcal hernia and to emphasise the necessity of different treatment.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Some Changes which take place in the Lungs and the Pleura, chiefly in Pulmonary Tuberculosis, as shown by Skiagraphy.

A MEETING of this society was held on Jan. 10th, Sir RICHARD DOUGLAS POWELL, Bart., the President, being in the chair.

Dr. DAVID LAWSON demonstrated Some Changes which take place in the Lungs and the Pleura, chiefly in Pulmonary Tuberculosis, as shown by Skiagraphy. He introduced his subject by showing the difference in the behaviour of serous fluid and serous fluid plus air in a rubber bag as exhibited by skiagrams. The upper border of the fluid in the bag from which air had been exhausted appeared ill-defined and concave on account of its capillarity, while that of the fluid in the air-containing bag was sharply defined and horizontal. The same difference was demonstrated between ordinary serous pleural effusions on the one hand and cases of hydro- or pyo-pneumothorax on the other. The x ray appearances of a pyo-pneumothorax four hours before operation and again three months and nine months later when the lung had fully expanded were exhibited by means of skiagrams thrown on the lantern screen. In the same way it was shown that in certain cases of pleural effusion the lung above the level of the fluid had undergone some compensatory emphysema, while in others there was the common association with an intrapulmonary apical lesion. The comparative appearances of collapsed lung, of thickened pleura, and of dry pleurisy were also demonstrated and the points of skiagraphic diagnosis between the foregoing conditions and that of pulmonary consolidation and cavitation were discussed. Dr. Lawson referred, too, to four instances of primary infiltration of the middle third of a lower lobe, the upper lobe on the same side remaining either apparently unaffected or, if not so, then only affected at a later date and to a minor extent, and pointed out the unfavourable prognosis presented by these cases. A striking instance of post-mortem corroboration of skiagraphic appearances was afforded by the comparison of a radiograph taken during life with a photograph of a lung after death in which four cavities were localised and demonstrated correctly.

Dr. HUGH WALSHAM referred to the beautiful appearance presented on the fluorescent screen by the splashing of fluid in a case of pyo-pneumothorax and recounted a case of pulmonary disease in which skiagraphy had been of service. He considered that the failure of a certain part of the lung to light up on deep inspiration was probably of importance in the early diagnosis of pulmonary tuberculosis. In his opinion pus produced a denser shadow than serous fluid.

Dr. J. E. SQUIRE emphasised the importance of skiagraphy as a means of making a permanent record of thoracic conditions at one time for comparison with those which obtained at another. He doubted whether skiagraphy enabled an earlier diagnosis to be made than was afforded by physical examination.

Dr. T. D. LISTER did not believe that skiagraphy was of importance in the diagnosis of pulmonary conditions.

Dr. J. KINGSTON FOWLER expressed his belief that in the majority of cases of early pulmonary tubercle physical signs were of greater value than the x rays. In cases of aneurysm he had found the latter of advantage.

Dr. F. RUFENACHT WALTERS referred to certain cases of pulmonary disease in which skiagraphy had not been utilised but in which he believed its use might have been interesting if not instructive.

Dr. LAWSON replied.

MEDICAL SOCIETY OF LONDON.

Functional Insanity and Allied Neuroses.—Encephalitis and its Relation to Acute Anterior Poliomyelitis.

A MEETING of this society was held on Jan. 9th, Mr. JOHN LANGTON, the President, being in the chair.

Dr. ROBERT JONES read a paper on Functional Insanity and Allied Neuroses. He defined function and included in his consideration the functions of the neuron. He referred to the fact that the function of many organs changed without leaving evidence of alteration in structure. Tumultuous cardiac disturbance followed upon a shock of surprise, albuminuria occurred without disease of the kidneys, and, similarly, mental perversion occurred with bodily disorders without any structural brain disease. The mental irritability and the impulsiveness of cardiac disease, the hopefulness accompanying pulmonary tuberculosis, and the different mental states accompanying digestive disorders, gout, and so on were instanced. In his definition of insanity Dr. Jones did not limit himself to legal insanity, which, he suggested, was a formal and artificial aspect, but took for the purpose of his paper the more comprehensive view that insanity was the negation of sanity, which definition included every variety of mental abnormality. There was no standard of health, which was a variable state, and therefore no standard of insanity, as the age of the individual, his position in society, and the period in which he lived were all qualifying conditions. The presence of illusions, hallucinations, and delusions was not necessary in the apprehension of insanity, for there were many men and women suffering from such who yet were capable of fulfilling their obligations to society and to themselves but who could not be considered insane; the final criterion of insanity was conduct. Dr. Jones referred to the temporary delirium of febrile states resulting from disordered nutrition and mentioned cases of scarlet fever, typhoid fever, and pneumonia which had been admitted under his care into the asylum as cases of insanity, in which the patients recovered with improvement in the febrile state and in whom only nutritional or functional disorder was present. He regretted that the pathologist had not elucidated insanity, and except in lesions accompanying paretic and other forms of dementia, certain neuronic changes occurring in acute delirium, and the deficiency of the development of pain observed in cases of idiocy and imbecility, there was no means of classifying insanity upon pathological findings, and it might be definitely stated that there was at the present time no pathology of insanity. Hitherto, many mental abnormalities were described as "disease manifestations" rather than actual disease. Dr. Jones referred to the physiology of the neuron and acknowledged the great work of Ferrier, Horsley, and others who endeavoured to investigate the actual material and quantity of nervous energy; but, in spite of so much progress, little more was known at present than its rate of transmission or conduction along a nerve.

[1] Brit. Med. Jour., 1887.

He also referred to the pathology of the neuron and indicated that poisons circulating in the blood attacked the fluid nutritive protoplasmic substance of the nerve cell and, with the possible exception of the tetanus toxin, no other poison attacked the fibrillar substance or the stereoplasm of nerve cells, demonstrating, pathologically, the possibility of functional rather than organic or structural disease. Dr. Jones referred to the evolution of insane ideas, remarking that the most highly evolved but less organised of the senses, such as sight and hearing, contributed more to insane delusions than did the more stable but less informing senses of smell and taste. He showed how tactile sensations were associated with hysteria, whereas auditory and visual sensations were more often associated with insanity, and that hysteria was a "lower-grade" insanity. In hysteria sensory disturbances resulted in motor activities; in insanity action followed delusions—a disturbance of the highest intellectual processes. He considered that much of insanity was functional, which appeared to be supported by the fact that 53 per cent. of all women admitted during 1903 into the asylums of London under the age of 25 years were discharged recovered within the year and in most cases thus discharged recovery took place under six months. Dr. Jones considered that the majority of cases of insanity among women were related to the emotions and were also of a transitory type. He referred to the loss of memory in normal persons, in cases of hysteria, and in insanity and claimed that the same paths and the same mechanism were at work in health and in functional abnormalities. He referred to cases of "double consciousness" and their sudden recovery, also to cases of post-epileptic automatism, both being probably functional, and he related cases of loss of memory under his care in which the condition completely and suddenly passed off. Dr. Jones next dealt with hypochondriasis, neurasthenia, epilepsy, paramyoclonus, and chorea and pointed to an absence of structural lesions in these cases. He also referred to astasia abasia as functional modifications in systematised areas of action. The mental condition accompanying pregnancy was another example of functional mental disturbance. He placed great stress upon the heredity of nervous diseases and urged that it was not diseases or ideas that were transmitted but a proclivity or a tendency to disease in adverse circumstances. He pointed out how necessary early treatment was in all functional mental states and that long-continued functional abnormality might become organic, as was exemplified when long-continued electrical stimulation of a cranial nerve caused nuclear changes; also that environmental states were important, as minute variations acting for long periods upon the most slowly growing of all the organs of the body might cause distressing disturbances, making it possible for functional mental abnormalities to end in incurable organic insanity.—Dr. C. A. MERCIER said that the question which this paper raised was not so much whether such a condition as functional insanity existed as whether there was any form of insanity which was not functional. He said that normally at regular intervals of the 24 hours the mind was wiped out by the occurrence of sleep. So in insanity portions of the nervous system became functionless but these periods occurred at irregular and not at regular intervals. A functional insanity was one in which no structural alteration in the brain could be found and he was inclined to regard all insanity as functional. Cells might be found to be damaged but these could not be connected with the hallucination and illusion which occurred. It was the remaining portion of undamaged cell which produced the symptoms and in this sense he regarded all insanity as functional.—Dr. T. B. HYSLOP dealt with the difficulty of distinguishing certain cases of neurasthenia from cases of general paralysis of the insane. He considered that it was important to endeavour to find out the lesion giving rise to the symptoms in any case, as this alone formed a basis for progress.—Dr. W. L. ANDRIEZEN considered there was no evidence of functional insanity. He stated that he had found areas of cortical sclerosis in cases of epilepsy. He did not regard the post-epileptic alteration of personality as functional in nature. He referred to the periodic attacks which occurred in dipsomania and to periodic attacks of melancholia which might persist for many years. These he considered as due to some maldevelopment or malnutrition which allowed the cerebral mechanism to become faulty.—Dr. JONES replied.

Dr. F. E. BATTEN read a paper on Encephalitis and its Relation to Acute Anterior Poliomyelitis. He said it was generally recognised that some cases of acute hemiplegia occurring in children were due to the same causes and had the same pathology as cases of acute anterior poliomyelitis. It was not, however, generally recognised that portions of the brain other than the motor path might be affected in a similar manner and give rise to a variety of symptoms. He said that cases presenting symptoms of acute intracranial disease frequently occurred during the summer months of the year. These cases were like anterior poliomyelitis, acute in onset, often in the early stage of the disease giving rise to extensive paralysis which in part rapidly cleared up, leaving more or less permanent paralysis. Convulsions were present in some cases. He said that these cases of encephalitis corresponded not only clinically and pathologically to acute anterior poliomyelitis but also in their seasonal relationship. He divided the cases according to the portion of the brain affected into three groups: (1) those cases in which the cerebral hemispheres were affected; (2) those cases in which the cerebellum was affected; and (3) those cases in which the cranial nuclei were affected. The symptoms varied according to the situation of the lesion. In affections of the cerebral hemisphere the lesion might affect the whole of one hemisphere or might limit itself to the frontal region, the Rolandic region, or the occipital region. The affection of the cerebellum might be unilateral or bilateral. In the affection of the cranial nuclei one or more of the cranial nuclei might be affected. The affections of the cerebrum and the cerebellum were described under the title polio-encephalitis superior, whilst affections of the cranial nuclei were described under the title polio-encephalitis inferior. He then proceeded to give instances of affection of the various portions of the cerebral cortex from cases which had for the most part occurred during the summer of 1904. After dealing shortly with the instances of affection of the frontal and the Rolandic region of the brain, the latter of which was the most common manifestation of the disease, he described a case in which there was evidence of affection of the occipital lobes. In this case the child was completely blind for three weeks without any other sign of ocular disease. From this the child gradually recovered completely, save for the fact that the child remained subject to attacks of petit mal. He then gave instances of affections of the cerebellum, both unilateral and bilateral, and finally instances of affections of some of the cranial nuclei. Passing then to the pathology of the disease he said that although recovery had taken place in all the present series of cases, yet in a former series he had been able to prove the pathological condition in two cases: in one case of hemiplegia in which the cortex of the left side was affected and in another in which the nucleus of the seventh nerve was affected on the right side. He then dealt with the seasonal relationships of the disease and pointed out that these cases of intracranial disease were more common during the summer months of the year. He had collected the cases of acute anterior poliomyelitis which had occurred during the summer of 1904 and he had met with 29 cases of anterior poliomyelitis and eight cases of polio-encephalitis. Much more pathological evidence was required on this point and he hoped at some future time to make his series of cases as complete pathologically as they were clinically.—Dr. C. E. BEEVOR said that the view held with regard to these cases of sudden hemiplegia in children was that they were due to thrombosis of the larger veins. He thought that considerable evidence had been brought forward pointing to the fact that the cause of this condition was thrombosis of the finer vessels.

SOCIETY OF ANÆSTHETISTS.

The Vernon-Harcourt Inhaler.

A MEETING of this society was held on Nov. 4th, 1904, Mr. C. CARTER BRAINE, the President, being in the chair.

Mr. EDGAR WILLETT, who opened a discussion on the Vernon-Harcourt Inhaler, said that he had now used it for over 250 cases and in selected cases in his hands it had given a satisfactory anæsthesia. In the large majority of cases he started the anæsthesia with nitrous oxide gas and ether and after some four or five minutes went on with the inhaler. He had done this because he found that it saved time and because in one case serious symptoms of syncope from chloroform, which disappeared under ether, had occurred. He had also found Mr. Harcourt's

"increase tube," which allowed of the strength of the chloroform vapour being increased to 3 per cent., of great use and with it he was but rarely obliged to discard the apparatus for some other. Of course, there were a large number of cases where the inhaler could not be used but apart from these he had found that the inhaler answered to all the ordinary requirements where ether was contra-indicated.

Dr. H. MACNAUGHTON-JONES and Mr. WALTER TYRRELL also spoke in favour of the apparatus.

Mr. PERCY W. G. SARGENT had seen the apparatus in use in the hands of a number of anæsthetists for a variety of surgeons, including himself. He was forced to say that from the operator's point of view it was not satisfactory. The induction took a longer time than could be spared by a surgeon with a long list of operations before him, while the anæsthesia was in a large number of cases too light and "reflex movements," movements that required controlling by dressers, were far too common. Where the anæsthetist started with ether he readily understood that the inhaler was more successful, as the initial incision was made while the patient was under the influence of that drug.

Dr. J. BLUMFELD said that after considerable use of the inhaler he had formed definite conclusions as to its value. Such instruments might be regarded from two points of view, the purely physiological or the clinical. He dealt entirely with the latter aspect. There were certain disadvantages in the use of the inhaler which should be mentioned. Cases of operation about the face or the neck were obviously instances in which the apparatus could not be used; in addition there were many cases in which the condition of the patient rendered a perfect result impossible of achievement in a reasonable time. Thus on several occasions in abdominal operations he had discarded the instrument because of the unsatisfactory relaxation of muscles. He was of opinion that for general use an inhaler must have a wider applicability than was the case with this one and that it was the duty of anæsthetists to obtain the best results and to teach others to obtain them with the simpler forms of apparatus. He fully realised the importance of accurate and small dosage in the use of chloroform but he did not agree that it was only to be obtained by the use of this inhaler. He considered also that it had defects with regard to the possibility of observing absolute cleanliness in all its parts and also as regards the ease with which accidental complications in the apparatus might arise.

Dr. DUDLEY W. BUXTON pointed out that they were there to obtain the results of the experience of anæsthetists who had used the inhaler and not to discuss whether a 2 per cent. chloroform vapour was sufficient for all the exigencies of surgery. The "regulator" was graded for this percentage but it could equally well be arranged for higher percentages if such were required. The arguments advanced against the inhaler were: (1) that it failed to produce anæsthesia; (2) that it produced a dangerous depth of narcosis; and (3) that it was untrustworthy, in that the register of strength was inaccurate. From his own experience of nearly 600 cases he could say that he had met with no deaths and no dangers, though reports to the contrary had been hinted at. If a greater depth of narcosis than was represented by the third degree of Snow, the true surgical anæsthesia, was required, then either a greater length of inhalation or a higher strength than 2 per cent. could be obtained by employing either a larger bottle or the accessory tube. The statements about increased percentages being caused by alterations in the depth or the frequency of respiration had been discussed by Mr. Harcourt and his answers to the criticism were conclusive. His (the speaker's) clinical experience went to show that both the changes in respiration due to "respiratory storms," which could only occur during incomplete anæsthesia—i.e., in the induction stage—and the alleged dangerous increase in percentage due to "slopping" of the chloroform in the bottle when it was shaken were negligible. He had never seen any symptoms of increased narcosis, which must have arisen if any considerable rise in the percentage of chloroform had been inhaled. Of course, care must be taken to avoid shaking but even raw students were soon enabled to acquire this heedfulness. The immense value of this inhaler lay in the fact that the person using it who would be watching his patient, knowing what depth of narcosis was required, was able to regulate to a nicety the dose given. He was convinced that a more extended use of the apparatus in the hands of those whose experience had been unfavourable would give better results.

Dr. J. F. W. SILK stated that though he had had no experience of the inhaler himself he felt that he was justified in forming an opinion founded on the very full description of other anæsthetists' results. It was obvious to everyone at the outset that its use was a limited one, as Mr. Willett had made it abundantly clear that it was not suitable for infants, operations about the mouth, and abdominal operations where full muscular relaxation was required. In such circumstances he considered that it was not a suitable instrument with which to teach students, as they could not be instructed in those classes of cases which were peculiarly suitable for the administration of pure chloroform. Further than that the long time that was required for the induction, so far as hospital work was concerned at any rate, made it necessary that the induction should be by nitrous oxide gas and ether. He also condemned it on other grounds. Its safety had been alleged but he pointed out that with the death-rate from chloroform, taken all round, at 1 in 3000 it was a little premature to make dogmatic statements from figures which only amounted to hundreds of administrations, and those in the hands of specialists, among whom the death-rate was far lower than the figure he had mentioned. As regards the machine being a regulating one, he had seen the rise and fall of many of these instruments and they had all failed because they were too complicated for ordinary use, and though the present one was an improvement as regards the accuracy of the regulating, that had been obtained by still further sacrifice of simplicity. He himself preferred to regulate the dose by the requirements of each individual case and not by the theoretical percentage that was thought to be sufficient.

Sir VICTOR HORSLEY spoke very highly of the inhaler, considering that it marked a great advance on the usual haphazard methods of giving chloroform. He had seen it used in a great number of cases of his own and always with a satisfactory result after the administrator had mastered the instrument. It enabled the latter not only to know exactly what amount he was giving at any particular moment but also what he had been giving. As regards those cases where there was insufficient relaxation of abdominal muscles, he thought that complete relaxation should not be aimed at, as that indicated a dangerous amount of narcosis.

Mr. H. C. CROUCH said that no report of the inhaler as used by former speakers was of any value; he had used the inhaler unclamped and had seen that the amount of shaking completely destroyed the intentions of the inventor, as the percentage of chloroform was obviously increased to a dangerous extent. It was idle for Dr. Dudley Buxton to say that the inhaler did not shake; the only way scientifically was so to fix it that it could not shake. He had done that and he found that the result was very different from the results with it unclamped. Sir Victor Horsley had said that it was an enormous advantage to know the amount of chloroform that was given. He agreed, but that was precisely what was not known with the Vernon-Harcourt inhaler, as with the indicator at 2 per cent., even in the clamped instrument, the anæsthetist might be giving 1·3 per cent. or 2·3 per cent. and he could not tell which. He was amused to see that the supporters of the apparatus had now given up the 2 per cent. limit as insufficient and had found that the "increase tube," which allowed of a nominal 3 per cent. to be given, was often necessary.

Dr. A. G. LEVY said that it was not necessary violently to splash the chloroform in order to raise the percentage of vapour, an appreciable increase of vapour being produced by the gentlest possible oscillation of the bottle, an extra surface of chloroform being thus presented by reason of the wetting of the sides of the bottle. During the transfer of the patient from the anæsthetising room to the operating theatre he had seen the bottle swaying sufficiently to produce a 5 per cent. vapour. It was significant that an excess of vapour was thus yielded at the moment when it was most necessary. Sir Victor Horsley had stated that a 2 per cent. vapour was sufficient for all purposes. Such a statement as evolved from the use of the Vernon-Harcourt inhaler could not be accepted in view of the inaccuracies of this instrument. When using an apparatus which eliminated these errors he found that 2 per cent. was quite insufficient. As the Vernon-Harcourt apparatus possessed sources of excess of vapour it was logical to assume, therefore, that more than 2 per cent. was administered in cases in which it was successfully used. He did not mean to suggest that the bottle was intentionally shaken, the normal oscillation of the bottle and that consequent upon the application of the hand to the bottle in warming it being sufficient to insure an efficient strength of

vapour in the majority of cases. With regard to the large variations admitted to be consequent upon fluctuations in the strength of the breathing, Sir Victor Horsley had explained these errors away by saying that whilst weak breathing gave a higher percentage it also resulted in a lower dosage (less total chloroform per minute). This argument did not affect the innate fact that the apparatus did not evolve the percentages it registered, and moreover Sir Victor Horsley's dosage theory still required substantiation—it did not appear to be in conformation with prevalent views.

Dr. DUDLEY BUXTON, in the absence of Mr. Willett, replied. He said that most of the speakers had had little or no experience of the apparatus; theirs were pious opinions which lacked conviction. He agreed with everything that Sir Victor Horsley had said. To Dr. Silk he could only say that Mr. Willett's limitation of cases was due to the fact that that gentleman held ether to be a safer anæsthetic than chloroform and so he employed it whenever it was possible. He (the speaker) used the inhaler for children (the faces of infants were not suitable for closely fitting masks) and for operations about the mouth until anæsthesia was established when he had recourse to a mouth tube and a Junker's inhaler. Mr. Crouch's remarks had been already dealt with. He believed that Dr. Levy's objections were more academic than real. In all cases the chloroformist must be alive to clinical phenomena and must meet the indication of the case. This was provided for by the valve in the Vernon-Harcourt inhaler. The period of induction was from eight to ten minutes and this was a shorter time than was required by the surgeon for his preparations. Where time was important the ethyl chloride-ether-chloroform sequence could be used.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Artificial Respiration.—Exhibition of Patients and Specimens.

A MEETING of this society was held in the large theatre of the Royal Infirmary on Dec. 21st, 1904, and partook of the nature of a clinical demonstration of patients. Dr. J. O. AFFLECK occupied the chair.

Professor E. A. SCHÄFER gave a demonstration of his method of Artificial Respiration. The patient was placed in the prone position and the operator kneeling on one side rhythmically compressed both sides of the chest with each hand. By this method artificial respiration could be kept up for a long time as there was little fatigue to the operator. The prone position was very advantageous in that it allowed water and mucus to drain naturally away from the patient; the tongue also had no tendency to fall backwards into the throat as it was apt to do in the supine position. There was also little or no risk of fracturing the ribs as frequently happened in Howard's method. In cases of asphyxia the liver was generally enormously swollen and with the patient in the supine position it was very easily ruptured, and indeed this accident frequently happened in ordinary attempts at artificial respiration. By having the patient in the prone position more air was allowed to gain entrance to the lungs as the pressure was spread over a wider surface and more equally than it was in the supine position, when the pressure was exerted over a limited area on each side.

Dr. W. ALLAN JAMIESON exhibited: 1. A man who had suffered from an extensive Tertiary Serpiginous Eruption and who showed the advantage of combining local with constitutional treatment. The patient had had no reminder of syphilis for 27 years, then this eruption appeared on his back, chest, abdomen, the inner sides of the thighs, and the arms. It was evidently of the nature of a serpiginous gumma which spread widely showing crusts and slight ulceration. The man was admitted to the Royal Infirmary in June, 1904, and under potassium iodide the condition improved. He was, however, re-admitted in the following September as the eruption had again extended very widely. The whole area was scraped with a sharp spoon repeatedly. A starch paste with a small quantity of calomel was then applied while iodide of potassium and carbonate of ammonium were administered internally and the result was successful under this combined treatment. 2. A case of Lichen Planus exhibiting peculiar colouration. The patient was a cab-driver, aged 51 years. He had suffered from gonorrhœa in 1881 and soft sore with suppurating bubo in 1882 but there was no history of syphilitic infection. He was admitted on Dec. 8th, 1904. The eruption first appeared on the inner side of the left knee in the shape of small pink spots. This then spread over the abdomen, the flanks, and the arms and there was much itching. This eruption was now represented by brownish spots. On section the microscopic appearance was that of a retrogressing lichen planus.

Dr. NORMAN WALKER showed two men suffering from Keloid over the usual site, the front of the chest. Both had been treated by the x rays and had greatly benefited, the pain having almost immediately disappeared. Two cases of Lupus of the face in women were also shown to demonstrate the permanent results of treatment by the x rays. In one case the patient first presented herself in June, 1901, and had been subjected to many exposures. The last exposure was, however, in May, 1903, and so for an interval of 18 months she had had no treatment and yet the improvement had persisted. In this case the everted mucous membrane of the eyelid had been changed into skin. In the second case 107 exposures had been made.

Dr. DAWSON F. D. TURNER showed: 1. A case of Tic Douloureux treated by static electricity. The case occurred in a woman who could get no sleep on account of the pain; there were twitching of the face on the left side and numbness. She was deaf on the affected side and had had all her teeth removed without benefit to the condition. The static breeze which had been commenced on Nov. 8th had proved of the greatest benefit in this case. 2. A case of Epithelioma of the Lower Lip in a man which had been treated by radium and then by the x rays. He had had exposures to radium on 17 days amounting in all to about eight and a half hours' duration and then subsequently the x rays. His condition showed a marked improvement. 3. A case of Flat-foot produced by the traumatism of jumping from a vehicle. The sinusoidal current had been applied to the foot in a foot-bath, with the result that the foot was now much stronger and the pain had entirely gone. Dr. Turner thought that the sinusoidal current found its best application in paretic conditions. 4. A case of Non-healing Ulcer situated over the external malleolus of the right foot. The ulcer had come and gone during the past two years. By the application of the x rays twice a week for four minutes the ulcer had entirely healed. 5. A woman with a Chronic Varicose Ulcer over the lower part of the left leg and to the inner side. The x ray treatment had done much good though the patient had not been laid up but had performed her usual house duties all day.

Dr. J. W. B. HODSDON showed a child, aged three years, on whom he had performed Primary Disarticulation of the Right Hip. The child had been run over by a car which caused a complete fracture as well as a greenstick fracture of the femur. The importance of the case lay in the remarkably beneficial effects which resulted from the intravenous injection of saline fluid and adrenalin extract. The child's pulse was 200 and after the injection of one pint of sodium chloride solution and 30 minims of adrenalin chloride solution it at once fell to 120 and the condition of shock was recovered from. Its use quite replaced strychnine and stimulants.

Mr. C. W. CATHCART demonstrated two cases of Laminectomy for Paraplegia. 1. The first case was that of a man, aged 45 years, who had suffered during the preceding nine months from complete paraplegia. At first he had been treated for the pain in his back by rest in bed but without any benefit. On admission to the Royal Infirmary the conclusion arrived at was that there was pressure on the cord in the region of the tenth or eleventh dorsal vertebra. On opening the canal the cord was found to be compressed by a growth arising from the front. There was no tuberculous material in the canal. The laminæ having been removed distinct improvement was noted within three weeks although all the symptoms were aggravated for a few days after the operation. The operation was performed in March, 1903, and the man could now just stand alone and could walk by the aid of a go-cart. Previously to the operation he suffered intense pain in his back but now there was only a slight soreness. The case was probably one of tuberculous disease of the spine. 2. The second case was not a tuberculous one. The man first complained of a swelling at the back of the neck. An abscess developed there and was opened in March, 1904. In two or three weeks after this complete paraplegia of both arms and legs developed. Mr. Cathcart thought that there was an inflammatory swelling pressing on the cord in the cervical region. At the operation much granulation

tissue was found underneath the laminæ. This was scraped out and the patient soon made an excellent recovery. He was now at work and had completely recovered the use of all his limbs. There was no trace of syphilis in the case. 3. A patient after nephrotomy for pyelitis and nephritis. The case showed the advantage of cutting down on the kidney in acute cases. The man suffered from cystitis and subacute nephritis. As he was getting weaker and emaciated and as the pain was chiefly complained of on the right side this kidney was cut down on from the lumbar aspect. The kidney was seen to be congested and swollen with certain spots of marked congestion and the surface was dotted over with yellow spots. It was evidently a case of septic nephritis and pyelitis. The pelvis of the kidney was incised and drained and at once the patient's temperature began to fall. He had steadily improved ever since the operation.

Dr. R. MCKENZIE JOHNSTON exhibited a patient after operation for Extradural Abscess following mastoid disease. The girl was admitted on Oct. 3rd, 1904, and previously to admission had suffered from pain and rigors. On examination granulations and perforations were present in both ears. Her temperature rose soon after admission to 104° F. and she had rigors. It was thought to be a case of thrombosis of the lateral sinus though there was little or no swelling over the mastoid or displacement of the auricle. On cutting down, however, the mastoid cells were found to be softened and full of pus. These were scraped out and on chiselling upwards a small sinus was discovered with very fœtid pus and gas escaping from it. Working backwards the middle fossa was opened into and about two drachms of thin pus were evacuated. The lateral sinus was explored to the extent of three-quarters of an inch and was found to contain no blood but an organised white clot occupied its lumen. The interest of the case lay in the fact that the patient had been going about with a thrombosis of the lateral sinus. The girl had improved every day since the operation and was at present plump and healthy.

Mr. F. M. CAIRD showed: 1. A lad who, two years previously, had gone to the Edinburgh Royal Infirmary with Wrist-drop and Claw-like Contracture of the Fingers of the Right Hand. The elbow-joint had been fractured three years previously and the arm had been put up in splints. The condition simulated musculo-spiral paralysis but was really not so. It was an ischæmic contracture affecting chiefly the flexor tendons. The operation consisted in lengthening the flexors of the wrist and the fingers and the condition had very greatly improved. 2. A boy, aged six years, who had presented a very similar condition. The elbow-joint had been injured and had been treated by splints. The tendons in front and behind were operated on and the contracted condition had greatly improved. 3. A patient (male) after extirpation of the rectum and the anus by the combined abdominal and perineal route. The man, aged 68 years, had had a prolonged history of carcinoma lasting four years Every part of the tumour was removed and the lower end of the descending colon now opened in the mesial line in front. The operation was performed eight weeks previously and the patient had put on two stones in weight since. 4. A girl, aged 21 years, who had suffered from perforation of a gastric ulcer on two separate occasions. The first operation was performed on Sept. 22nd, 1903, 24 hours after the rupture. The ulcer was found situated on the lesser curvature and was of the size of a threepenny-piece. A slight hour-glass contraction of the stomach was then noticed. On Nov. 24th, 1904, she was again admitted and the operation was performed 14 hours after rupture. Many adhesions of the omentum were present and another ruptured ulcer was found of larger size than the previous one but in the same situation. The stomach showed a well-marked hour-glass contraction and as the suturing of the rupture contracted the passage too much gastro-enterostomy was performed and now the patient could eat any ordinary food.

Mr. H. ALEXIS THOMSON exhibited a man, a tailor, who had suffered much from large gouty deposits on the areas of pressure—e.g., over the malleoli, elbows, and ligamentum patellæ. These had been removed and only one recurrence in the left elbow had shown itself. Many tophi were present symmetrically in the soles of the feet and had been removed. Deposits of urate of sodium had been observed in the synovial sheaths. The patient also suffered from well-marked pyorrhœa. Great improvement had resulted in his condition though it was generally stated that such deposits ought not to be interfered with.

The following specimens were exhibited:—

Dr. S. MACVIE: Photographs of Enormous Horns growing from the Toe-nails of a Woman.

Mr. J. M. COTTERILL: (1) Ileo-cæcal Intussusception; (2) Two Cases of Hydronephrosis; (3) a Loose Body from the Knee-joint; and (4) Malignant Disease of the Stomach and Liver from a case of Gastro-enterostomy.

Mr. CAIRD: (1) Rectum removed from the case described above; (2) a Tuberculous Kidney, with drawings illustrating the results gained by the Luys Separator; and (3) Stomach showing Posterior Gastro-jejunostomy and Lateral Anastomosis.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on Jan. 6th, Dr. J. F. J. Sykes, the President, being in the chair.—Sir Lauder Brunton opened a discussion on the report of the Inter-departmental Committee on Physical Degeneration and pointed out that the fact of deterioration could be determined only by periodical and systematic measurements of children in schools. Medical inspection must be organised for the detection and relief of defects of vision and hearing and incipient constitutional disease. The physical education of children of both sexes should receive no less attention than the intellectual and the character of each should be to a great extent guided by the results of the medical examinations. School kitchens should provide means of instructing girls in the art of cookery while supplying meals at cost price to those who could pay and free to such as could not, the expenses being defrayed by voluntary effort or from the rates. Practical hygiene must be regularly taught and the schools themselves should be object lessons in health. The feeding of infants was a most difficult matter and on many grounds he did not approve of municipal milk depôts, preferring that the authorities should bring pressure on the large dairy companies to maintain a universally high standard of supply. He would not attempt to discuss the depopulation of the country by migration to the towns but expressed a hope that the authorities would some day consider any house "overcrowded" with more than two inmates to each room. Poverty, overcrowding, and physical degeneration were inseparably associated in causal relation. Medical officers of health must have security of tenure and extended authority and the creation of a national Board of Health was highly desirable. Failing this the committee urged the appointment of an advisory council representing the departments of State within whose province questions relating to the physical welfare of the nation fell, together with the medical corporations and including other scientific experts. The National League for Promoting Physical Education and Improvement was being constituted with a view to secure the organised coöperation of all existing associations and persons engaged or interested in the promotion of these efforts, and foremost among these he would place the medical officers of health throughout the country.—Sir John Gorst maintained that these conditions were well known to the officials of the Board of Education and that it was the duty of each one to press on the local education authorities, now the county and borough councils, the need for medical inspection at regular intervals; this, though it would not cure, would reveal the extent of the evils.—Dr. H. Franklin Parsons feared that free meals would not only pauperise the recipient but would lower wages.—Miss A. M. Anderson, chief lady inspector of factories, complained of the ignorance of the ladies who, with leisure and enthusiasm, offered their services as visitors. Girls of all classes wanted training in all that belonged to health which, under modern social conditions, they could not get from their mothers. The girls might be taught in evening schools but the instruction of the mothers must be provided by the medical officer of health.—Dr. J. C. McVail mentioned a school board in Scotland which had several houses of two and three rooms to which girls were drafted for a week or two at a time to learn domestic work. The depopulation of rural districts might be greatly checked by the removal of factories into the country.—Dr. A. Newsholme regarded overcrowding, deficient food, and drunkenness as due to high rents, insufficient earnings, and misspending of the money earned.—Dr. A. K. Chalmers referred to the direct ratio observed in Edinburgh and Glasgow between the size of the rooms from which the children came and their height,

weight, and general intelligence. In the latter town the visitors provided meals at a cost charge of 1½*d.* a day to all who accepted the offer and found that such children made better progress than those fed at greater cost at home.—Dr. Kerr thought that the number of really half-starved children had been greatly exaggerated. But children must be looked on as future citizens from the physical side no less than from the mental; the appointment of school nurses in a few places had given the best results.—Dr. F. J. Allan said that he had received from a large staff of lady visitors valuable assistance after they had had the instruction that most of them greatly needed.—The President quoted figures showing the remarkable fluctuations in the infant mortality of different towns and after the discussion had been sustained by several speakers, medical officers of health and others, Sir Lauder Brunton replied. He pointed out that in Switzerland, where the State spent vast sums, greater than in any other country, on education, mostly free, very few children were fed at the cost of the rates and nearly as few by voluntary effort. He would say with the prophet, "My people are destroyed for lack of knowledge."

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Dec. 21st, 1904, Dr. J. K. Kelly, the President, being in the chair.—The following specimens were exhibited:—Dr. J. M. Munro Kerr: Uterus removed by Vaginal Hysterectomy for Cancer of the Cervix complicated with Pregnancy. Cæsarean section preceded the vaginal operation.—The President: (1) Myoma of Uterus with Hæmorrhagic Degeneration; (2) Dermoid Cyst of Ovary; and (3) Ovarian Cyst.—Dr. J. Edgar: Mulberry Calculus from Ureter.—Dr. R. Jardine: Drawings of Corneal Opacities in Infants.—The business of the meeting was a discussion on the Treatment of Prolapse of the Uterus, introduced by Dr. W. L. Reid. Dr. Reid spoke first of the more chronic forms of prolapse, dwelling upon prophylaxis as very important. In milder forms of prolapse a pessary was often curative, more especially that of Albert Smith. When operative treatment was necessary the most suitable operation was that of amputation of the cervix with repair of the perineum together with anterior and posterior colporrhaphy. Fixation of the uterus to the anterior abdominal wall was also necessary in some cases. Dr. Reid said that he had no experience of paraffin injection in such cases.—Dr. Kerr was impressed with the disadvantages of the watch-spring pessary as becoming septic so quickly from the vaginal discharges. He also considered it of benefit to have a strong pelvic floor when repairing the perineum.—Dr. G. Balfour Marshall remarked that in cases of hypertrophy of the median portion of the cervix a pessary was of use in causing shortening.—Dr. Edgar had some experience of paraffin injection but considered it as somewhat dangerous owing to the risk of subsequent pulmonary embolism.—Dr. G. Scott MacGregor had tried paraffin injection once with failure.—Dr. C. C. Douglas spoke as to Martin's method of procedure.—The President remarked that he seldom performed a colporrhaphy when doing ventrofixation.—Dr. Reid replied.

ROCHDALE AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held on Jan. 5th. Dr. D. Richmond showed five cases which had been operated on through the mastoid for Middle-ear Disease. All had suffered from discharge and deafness. One also suffered from attacks of giddiness and another from facial paralysis. The latter, a man, had had discharge from the ear for 20 years and was operated on by Dr. D. McKeown of Manchester. At the operation the sigmoid sinus was laid bare and appeared to be normal. A few days later the temperature became irregular and ten days after the operation the wound was reopened and the wall of the sinus was found to be indurated. It was freely exposed and excised after ligature of the internal jugular vein. The cavity was packed. Recovery was uninterrupted except for the formation of a large gluteal abscess. All five cases were cured by the operation. Three remained deaf, one recovered slight hearing, and one good hearing. The man who had Bell's paralysis had recovered almost complete power in the facial muscles. Dr. Richmond also showed a girl who had suffered from severe supra-orbital pain on the left side and also from what appeared to be hysterical fits. As the cause of the headache a diagnosis was made of blocking of the frontal sinus. The frontal region was trephined and a cyst was found containing from two to three drachms of clear fluid. The posterior wall was soft and yielding and the cyst seemed to be subdural. The lining was scraped and the cavity was packed with iodoform gauze. Granulation took place and in two weeks the wound was stitched. The patient had had no headache and no fits since the operation.—Mr. H. H. I. Hitchon, Dr. W. H. Carse, Mr. Wilton Mills, the President (Mr. W. Pooley), and others took part in a discussion on the cases.

Reviews and Notices of Books.

A Manual of the Practice of Medicine. By FREDERICK TAYLOR, M.D. Lond., F.R.C.P. Lond., Senior Physician to, and Lecturer on Medicine at, Guy's Hospital; Consulting Physician to the Evelina Hospital for Sick Children; Examiner in Medicine at the University of London. Seventh edition. London: J. and A. Churchill. 1904. Pp. 1065. Price 15*s.*

THIS manual is so well known that no words from us are necessary as to its general nature and scope. The work has been subjected to a very thorough revision since the last edition and considerable alterations and additions have been made. The sections on several subjects have been altered so as to include the results of the latest researches as to etiology, pathology, and treatment. In the section dealing with malarial fevers the relation of the mosquito to the malarial parasites is carefully considered and an interesting account is given of the changes which may be observed to occur in the organisms found in the blood of patients suffering from a pernicious form of fever. We notice that Dr. Taylor still employs the term "phthisis" as meaning "a destructive disease of the lung, brought about by the invasion of the tubercle bacillus." We have for some time past used the term "pulmonary tuberculosis" for such disease as being not only more exact but as indicating the site and the nature of the malady, and trust before long to see a general adoption of the term. A few remarks are made on the "sanatorium treatment," but these are so brief as to be practically valueless and no mention is made of one of the essential points—namely, the regulation of the patient's life according to his temperature chart. We quite agree, however, with Dr. Taylor's remark that for complete success the duration of the treatment must be very much longer than the period of three months for which it is sometimes prescribed.

In this edition many subjects are introduced for the first time into the book. A short account is given of Sleeping Sickness, the etiology being fully explained. Dr. Taylor is fully convinced as to the infection of patients by the glossina palpalis and as to the determination of the symptoms by the entrance of the trypanosome into the cerebro-spinal fluid. A brief description is given of Family Periodic Paralysis. The pathology is not definitely understood; the probability seems to be that some toxin is operating upon the muscular fibres. Some interesting observations have been made on the relations of the urine and of kreatinin-excretion to the attacks. In the section on Compression of the Spinal Cord some remarks have been added to the account of the diseases of the conus medullaris and the cauda equina. In discussing the diagnosis of these affections Dr. Taylor draws attention to the importance of seeking for the prominence of the spine which caries so frequently produces; at the same time he remarks that all the symptoms of compression may precede by several months the appearance of any projection of the spine. A section has been introduced on Diseases of the Thymus Gland. No mention, however, is made of the supposed connexion between atrophy of the gland and the marasmus of infants. In describing the disorders of nutrition which involve the bones and the joints the condition known as infective arthritis is discussed. In several of the infectious diseases, such as typhus fever and typhoid fever, influenza,

pneumonia, septicæmia, and gonorrhœa, arthritis is found as a complication. Whether it is due in every instance to the specific organism of the disease or to a secondary infection is not always clear. Pulmonary osteo-arthropathy is also stated to be a form of multiple arthritis either of pyococcal or tuberculous origin. Another new section is that on Myelopathic Albuminuria, a name given by Dr. T. R. Bradshaw to a disease of the marrow of bones with which is associated the presence of albumin in the urine. The disease has probably in the past been confounded with mollities ossium.

It will thus be seen that Dr. Taylor's manual is still characterised by the thoroughness and the completeness which have stamped it throughout as a most excellent text-book both for students and for practitioners.

First Report of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. By the Director, ANDREW BALFOUR, M.D., B.Sc. Edin., M.R.C.P. Edin., D.P.H. Cantab. Department of Education, Sudan Government, Khartoum. 1904. Pp. 84.

IN 1902 Mr. Henry S. Wellcome generously equipped the Research Laboratories of the Gordon College in the Sudan which were instituted for the purposes of (1) technical education; (2) the study of tropical disorders, especially of the Sudan, of both man and beast; (3) the study of the detection of poisons; (4) the chemical and bacteriological examination of water; and (5) the testing of materials of practical interest in the industrial development of the Sudan. Dr. Andrew Balfour was appointed director and reached Khartoum in January, 1903, and at once set to work to get the laboratories into working order. They now have the nucleus of what will eventually prove to be a most valuable collection of specimens and photographs of human pathology and tropical diseases. A "therapeutic garden" has been started to facilitate the study of the indigenous drugs and poisons of the Sudan. In several instances also medical officers in Khartoum have seized the opportunity of working in the laboratories.

The volume before us embraces the record of the first year's work. Dr. Balfour first describes that taken in reference to mosquitoes. Of the varieties found in Khartoum and its neighbourhood the commonest is *culex fatigans*, responsible for filariasis and dengue. The presence of this mosquito, however, had no very alarming effect. The *pyretophorus costalis*, however, had seriously to be reckoned with as it is both a filaria and a malaria carrier. The *stegomyia fasciata*, the carrier of yellow fever, was also found, as well as some other varieties. To get rid of these pests "mosquito brigades" were formed and the mosquitoes were attacked chiefly in the larval stage. This was comparatively an easy task as there were no swamps or ditches in Khartoum. Crude petroleum was employed, about one pint being used for each well. The oil was simply poured down the well and then the water was not disturbed for 48 hours. All unused wells were closed whilst covers were fixed on those in use. The steamers on the Nile were also treated with crude petroleum, in addition to periodical emptying of the bilge water and fumigation with sulphur squibs. As the result of these measures Dr. Balfour estimates that 222,000 mosquitoes were destroyed, so that there has been an enormous depletion of these agents of disease. Another good result of the labours of the "brigades" has been to locate every well in Khartoum, a matter of great importance in the event of any outbreak of cholera or enteric fever.

In the section on Biting and Noxious Insects other than Mosquitoes is detailed a discovery by Lieutenant-Colonel Griffith, D.S.O., who was equipped by the laboratory with a small entomological outfit previously to his journey up the White Nile. This officer brought back specimens of the glossina morsitans caught on the Pongo river in the Bahr-el-Ghazal province. This fly had not previously been reported so far north in these regions. A very interesting portion of the report is devoted to the insects and vegetable parasites injurious to crops. The diseases discovered from an examination of the blood, the fæces, the urine, the sputum, and the skin are next detailed; then those detected by a general examination of the body are described, and, finally, the various local affections are noted. A chapter is devoted to the subject of eosinophilia in bilharzia disease and dracontiasis, and the report concludes with an account of the mosquitoes of Egypt, the Sudan, and Abyssinia by Mr. F. V. Theobald.

Should future reports equal the present one the Egyptian Government must be held fortunate in possessing so able a director of the Khartoum Laboratories as Dr. Balfour. The work shown is also an example of the good seed sown by the London School of Tropical Medicine, from which Dr. Balfour proceeded to Khartoum.

LIBRARY TABLE.

Examination of the Urine: A Manual for Students and Practitioners. By G. A. DE SANTOS SAXE, M.D., Assistant Pathologist to the Columbus Hospital, New York, &c. London, New York, and Philadelphia: W. B. Saunders and Co. 1904. Pp. 391. Price 6*s.* 6*d.* net.—Dr. Saxe's little book on the examination of the urine possesses many commendable features. It is of convenient form and size and is printed in clear type, with headings in dark letters, rendering reference to the different tests easy and rapid. It also gives a very complete account of the subject, dealing not only with substances commonly sought for in the urine, such as albumin, phosphates, chlorides, sugar, uric acid, and so forth, but also with the tests for purins, for kreatin and kreatinin, and for various pigments, rare acids, and bodies occasionally found as curiosities. The names of authors who have devised special tests are quoted, but the references to their original articles are not given; we think that the value of the book would have been enhanced by the inclusion of a certain number of such references, especially in the case of methods which have not yet established their claims to acceptance. The information given is generally correct but we notice that the account of Pavy's solution as a test for sugar is very meagre and that the composition of the fluid is inaccurately stated, as the essential constituent, the ammonia, is not included. The latter part of the volume is devoted to the diagnostic import of the urinary findings and to methods of testing the functional activity of the kidneys, such as cryoscopy and injection of methylene blue or phloridzin. The classification of the various forms of nephritis is at present in so confused a condition that any scheme adopted would probably invite criticism. We venture to doubt, however, whether any distinct line can be drawn between some of the toxic conditions here classified as acute congestion of the kidneys and acute nephritis, while the division of chronic nephritis into chronic diffuse and chronic parenchymatous forms seems to rest upon a very slender basis, as is sufficiently indicated by the synonyms given as applicable to the two conditions respectively which appear mutually interchangeable. The book is very fully illustrated and among the figures are some useful illustrations of foreign bodies, such as starch granules, lycopodium, linen fibres, and similar materials, which often cause difficulties to the inexperienced. In view of the American spelling, "chemic" and "spheric" for "chemical" and "spherical," we wonder how it is that "clinical" escapes the docking of its final syllable. Probably the word is too commonly used to be altered; the artificial nature of the new spelling is sufficiently indicated.

The Religion of the Koran. The Wisdom of the East Series. By ARTHUR N. WOLLASTON, C.I.E. London: The Orient Press. 1904. Pp. 70. Price 1*s.* net.—As the sacred volume of some 170,000,000 of the present inhabitants of the world the Koran possesses an interest and an importance which well merit and will amply repay attention and study. It is universally allowed to be written with great elegance and purity of style. It would be difficult to surpass the eloquence and the beauty of the diction. As Mr. Wollaston says, "Well may Muhammad have disclaimed all power of working miracles, trusting to the sacred book as evidence of his mission from on high." In his introduction the author gives an interesting outline of the religion of Islam, and the little book will no doubt be well received as it is full of interest to lovers of Oriental lore. The extracts are sufficiently full to give an adequate idea of the teaching of the Koran.

The Art of Choosing a Husband. By PAOLO MANTEGAZZA. Translated from the Italian by GABRIEL CLAUDE CHARTON. London: Gay and Bird. 1904. Pp. 322.—This book contains a father's advice to his daughter on this most momentous question. The father is a medical man and the book is one which all may read and learn much from and yet, good as it is, we hesitate to recommend it for the perusal of young girls. Some of the pages have a continental flavour about them which is not pleasing. Had such portions been omitted in the translation there would have remained an amusing and instructive volume for our daughters. In discussing the professions, the father's advice may thus be summed up: Never marry an idler, a banker, a mediocre author or artist, or a medical man of little culture, who may always be compelled to flounder in mediocrity. In the medical profession the only good seats are in the stalls and boxes; the pit is a prison and the gallery is the penal settlement where hard labour is enforced. Medicine is a profession in which it is impossible to climb to the topmost height unless encouraged by human love or the aspiration for fame. Experience teaches that, everything else being equal, the soldier is the best of all husbands.

The Addison Temperance Reader, with Chapters on Thrift and on Juvenile Smoking. By WILLIAM FINNEMORE. London: The Addison Publishing Co. Pp. 219. Price 1*s.* 6*d.*—This "Reader" was written by an ex-teacher who for several years was a lecturer on temperance in public elementary schools. The book has been read and revised in proof by several persons of judgment and with special qualifications for such work. It is written in a simple way and in moderate language and therefore commends itself to us, as it may well do to the teachers in our elementary schools. The chapters which bear on the formation of habits will be found particularly valuable. The book is illustrated by diagrams and pictures.

JOURNALS AND MAGAZINES.

The Journal of Anatomy and Physiology, Normal and Pathological, Human and Comparative. Conducted by Sir WILLIAM TURNER, K.C.B., F.R.S., D. J. CUNNINGHAM, F.R.S., G. S. HUNTINGTON, M.D., A. MACALISTER, F.R.S., and J. G. M'KENDRICK, F.R.S. Vol. XXXIX., Part 2. January, 1905. With plates and figures in the text. London: Charles Griffin. Annual subscription, 21*s.*, post free.—The contents of this number are: 1. Two cases of Fourth Molar Teeth in the Skulls of an Australian Aboriginal and a New Caledonian, by J. T. Wilson, M.B. Edin., Professor of Anatomy, University of Sydney, N.S.W., with two plates. 2. The Development of the Retina in Amphibia; an Embryological and Cytological Study, by John Cameron, M.D. Edin., with two plates. 3. The Relations of the Superior Oblique Muscle of the Eye in the Mammals, by Frank S. Poole, B.A. In this article are contained some novel observations on the angle of divergence of the superior oblique from the middle line in several animals. 4. The Os Calcis, Part ii., by P. P. Laidlaw, B.A., with five plates. 5. The Histology of Lymphatic Glands: the General Structure, the Reticulum, and the Germ Centres, by T. L. Bunting, M.D. Edin. 6. The Theory of Nerve Components, especially with regard to its Relation to the Segmentation of the Vertebrate Head, by Onèra A. Merritt, B.Sc. This number contains the Proceedings of the Anatomical Society of Great Britain and Ireland for November, 1904.

The Practitioner.—This magazine makes a good start for the new year. The January number opens with a valuable article upon Moveable Kidney by Sir Frederick Treves who concludes that a very small proportion of the cases of this complaint require operation. A series of articles upon Diet in Pulmonary Consumption are scientific and valuable and the practical conclusions to be drawn from experiment and clinical evidence are excellently set forth in Dr. Arthur C. Latham's capital contribution. Articles on Gastro-enterostomy, on the Parasites of Small-pox, Vaccinia, and Varicella, on Tramps and Small-pox, and several reviews unite to complete an excellent issue.

The Journal of Physiology. Edited by Sir MICHAEL FOSTER, K.C.B., F.R.S., and J. N. LANGLEY, F.R.S. Vol. XXXII. No. 1. Dec. 30th, 1904. London: C. J. Clay and Sons. Price 6*s.*—The articles contained in this number are the following: 1. The Lymph Flow from the Pancreas, by F. A. Bainbridge, M.D. Cantab., with two figures in the text. The conclusions at which the author of this article arrives are that the intravenous injection of the substance obtained from the intestine by Mr. W. M. Bayliss and Dr. E. H. Starling and named secretin by them, or of the extract of the ileum, causes an increased flow of lymph from the thoracic duct; that this increase continues after the injection of secretin but not after the injection of the extract of the ileum when the portal lymphatics are ligatured; that secretin itself and not any depressor substance is the active agent in causing the increased flow of lymph; and, lastly, that there is a close relation between the secretion of pancreatic juice and the increased flow of lymph. 2. The Changes in the Viscosity of the Blood produced by Alcohol, by R. Burdon-Opitz, Columbia University, New York. The viscosity values were determined by the time occupied by a measured quantity of blood under a certain pressure in passing through a capillary tube of known size. Alcohol always rendered the blood more viscous, whether introduced into the system by intravenous injection or through the digestive tract. 3. The Gaseous Metabolism of the Kidney, by J. Barcroft, M.A., and T. G. Brodie, M.D. Lond., F.R.S. These experimenters find that the production of diuresis is accompanied by a marked increase in the amount of oxygen absorbed, though the increase is not proportionate to the degree of diuresis. In only one of several experiments was there an increase in the amount of carbon dioxide eliminated during diuresis. The onset of diuresis is not accompanied by a proportionate increase in the flow of blood through the kidney. The experiments were made on dogs. 4. The Relationship of the Thymus to the Sexual Organs; Part ii.: The Influence of Removal of the Thymus on the Growth of the Sexual Organs, by D. Noel Paton. The author finds that there is a reciprocal action between the thymus and the testis, each checking the growth of the other. 5. The Universal Presence of Erepsin in Animal Tissues, by H. M. Vernon, M.D. Oxon. The kidney was found to be richest in erepsin, then the intestinal mucous membrane, and then in succession the pancreas, the spleen, and the liver; the skeletal muscles and the brain were the poorest of all in erepsin. 6. The Formation of Prussic Acid by the Oxidation of Albumins, by R. H. Aders Plimmer, D.Sc. The author finds that by

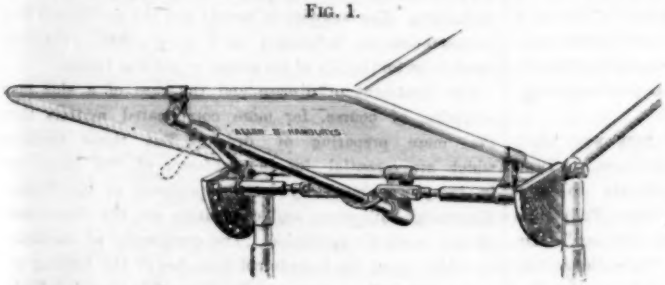
the oxidation of albumins with chromic acid a constant amount of prussic acid is evolved which varies with each albumin; the prussic acid arises from the glycocoll and aspartic acid but the other amido-acids also give rise to a small quantity. 7. The Effects of Adrenalin on Sugar and Nitrogen Excretion in the Urine of Birds, by D. Noel Paton. The author finds that adrenalin when administered subcutaneously causes glycosuria in birds as in mammals and does not act through the pancreas. 8. Some Observations upon the Functions of the Thyroid and Parathyroid Glands, by Swale Vincent, professor of physiology in the University of Manitoba, Canada, and W. A. Jolly, University of Edinburgh. The experiments made by these authors show great diversity of results in different animals. 9. The Selective Action of Cocaine on Nerve Fibres, by W. E. Dixon, M.D. Cantab., with five figures in the text. The author finds that cocaine locally applied picks out and paralyses some fibres before others, as sensory- before motor-vagal fibres, fibres conducting upwards before those conducting downwards, vaso-constrictor fibres before vaso-dilators, and he suggests that it might hence be of service in early chloroform narcosis. This number of the journal contains the Proceedings of the Physiological Society for Nov. 12th, 1904.

New Inventions.

ASEPTIC TABLES FOR OPERATIONS AND DRESSINGS.

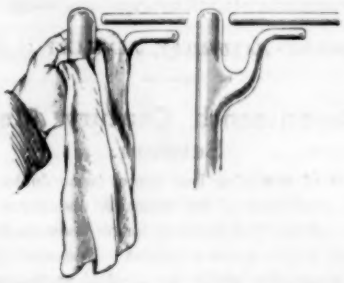
THE "phosphor bronze" metal with which Messrs. Allen and Hanburys, Limited, of 48, Wigmore-street, London, W., are making articles for use in hospitals and consulting rooms seems to be peculiarly suitable for the purpose by reason of its great strength, cheapness, and its acid-resisting and anti-corrosive properties. It takes a high polish but if left untouched assumes in the course of time a dark and pleasing colour somewhat resembling mahogany. We have had our attention drawn to an operation table constructed with this metal the special features of which are a head- or leg-rest (Fig. 1) and an improved means of altering the plane of the table. These improvements possess advantages to the patient as regards comfort and greatly facilitate the work of the surgeon or his assistants in rapidly and with little exertion altering the position of the patient. With regard to the head- and foot-rest racks, screws, and cones are entirely dispensed with and adjustment is made by pressing a handle to the right or the left. The dotted lines show the handle turned

FIG. 1.



to the left. The angle of inclination is fixed automatically, the ends of a moveable rod engaging holes in fixed gun-metal quadrants clearly shown at either side of the table in the illustration. The table itself is placed at any inclination required by means of a lever which is easily worked with one hand. The position is locked automatically, the mechanism which effects this being remarkably simple and for all practical purposes impossible to get out of order. These tables have already been supplied to St. Thomas's Hospital and other hospitals. The aseptic dressing

FIG. 2.



tables are constructed with the patent corner illustrated above (Fig. 2). The plate-glass shelves can be cleaned and dusted without being removed from the framework. The shelves rest on a very small surface, while the duster can be freely passed around every corner and angle. The ball-bearing castors attached to these tables are so made that the table moves with a slight touch. It should be mentioned that the operation tables are also fitted with patent castors which, by means of a lever, can be put out of action when required.

AN INTRALARYNGEAL SYRINGE.

THIS instrument differs from the ordinary intralaryngeal syringe in having three apertures placed laterally instead of one central opening, an arrangement which insures distribution of the injected fluid over the supraglottic region. It will be found equally useful for intratracheal injection, since the combined sectional area of the apertures is sufficient for the free escape of the fluid. Messrs. Mayer

and Meltzer of 71, Great Portland-street, London, W., have made a most serviceable instrument graduated to a capacity of four drachms.

WYATT WINGRAVE, M.D. Durh.,
Physician, Central London Throat and Ear Hospital.
Devonshire-street, W.

LONDON SCHOOL OF TROPICAL MEDICINE.—Of the students who attended the above school for the session October–December, 1904, the following passed the examination at the end of the course:—Dr. J. H. Cook, Mr. D. Alexander (colonial service), Mr. T. G. D. Cooper (colonial service), Dr. D. H. Ainslie, Mr. W. A. Densham, Dr. H. N. H. Joynt (colonial service), Dr. G. H. L. Fitzwilliams, Mr. P. Phillips (colonial service), Dr. J. Gillies, Miss Kathleen Dawson, Dr. D. A. Ashton (colonial service), Dr. J. C. Carr, Mr. R. Dane (colonial service), Mr. J. W. Gromitt (colonial service), Mr. C. H. D. Ralph (colonial service), Mr. A. C. Lorena (colonial service), Dr. F. L. Norris (colonial service), and Dr. W. F. L. A. Holcroft (colonial service).

THE LANCET.

LONDON: SATURDAY, JANUARY 14, 1905.

A Seventeenth Century Medical Sermon.

THE art of preaching has, there is no doubt, declined since the great days of the sixteenth and the seventeenth centuries and the Church can no longer boast an ANDREWES, a BOSSUET, a TAYLOR, or a VIEYRA Even special occasions such as those with which the medical profession is more intimately connected—namely, the meeting of the British Medical Association or the anniversary services of the Guild of St. Luke—but rarely give rise to sermons which have the rhetorical force and the literary power of the old sermons. The old preachers were not afraid to draw startling morals and to use brilliant illustrations to set forth spiritual truths, and their discourses, although nowadays they would be considered forced in interpretation, afford most admirable reading. By the end of the seventeenth century the light was waning and although the mystical interpretation of Scripture was still employed yet the results were that the preacher drew somewhat muddy waters from the wells of knowledge. After ANDREWES and TAYLOR there were but few who could deliver a really moving sermon. A curious specimen, by no means the worst of its class, is now lying before us, being "A Sermon preached at St. Anne, Blackfriars, before the Company of the Apothecaries of London, Septemb. 8th, 1681, and at their Desire made Publick, by ANTHONY WALKER, D.D., and Rector of Fyfield in Essex." To this "Publick" copy of his discourse the Reverend Doctor has prefixed a preface in which he expresses his gratitude that the Company should not have in any way taken offence at the plain way in which he had warned its members of the flies which might find their way into its ointment. He also provides "arms to obviate two possible assaults" from those members of the public who were not apothecaries. "First of those who may grudge at the right and honour I have endeavoured to do your Profession. Secondly of those who may Subsann and expose my Phrase, because I sometimes speak (tho' sparingly) in your Language, and keep close to that Notion."

To come to the sermon itself: the text was taken from Ecclesiastes, chapter ten, the first verse. "Dead flies cause the ointment of the Apothecary to send forth a stinking savour: So doth a little Folly him that is in reputation for Wisdom and Honour." Dr. WALKER commenced by pointing out to his audience how the text sets forth the exceeding nobleness of the profession of apothecary, and, further, that "the most excellent and useful things may be corrupted or perverted by the casual or careless mixture of a little Evil." A fly is but a small thing and only gets into the ointment through carelessness. He then shows that besides the literal flies there are many who are flies in a mystical sense, Such are careless apothecaries who supply bad drugs, Moreover, he directs them: "Remember there are a swarm of Quacks and Empyricks, Mountebanks, Elixorists, Catholicists, as numerous as a swarm of Flies: and one Fly will quickly spy another: These watch your haltings, if you make blots these Gamesters will be sure to hit them: If you give any one a fly to swallow, they will fetch it up again without straining and present it spitefully to the whole City, in the Dimensions of a Camel: Therefore for the Honour of your Profession, and to take away occasion from them, who feel occasion to reproach you, Keep off the Flies. ..... Those little creeping Sneaks who walk like the Pestilence in darkness, under no Protection or Warrant but their own ignorant Presumption, may kill in secret and no man sees them; and their surviving Friends are ashamed to tell who hurt them for fear of blasting their discretion and they should dye unpitied for venturing their lives into such hands; and the Mushroom that did the Mischief hurts no man's credit but his own: which before was lost to all wise men; for it is his pride to stand alone; and his tool is of his own Invention, which no man ever heard of but himself. But you Stand in an Open Light, the beams of Publick Authority shine round about you. ....." For all this he reminds the apothecaries that they had no right to practise medicine. "There is vast difference between making and administering Physick. Nothing is more Common than for one Trade to make Tools for other Trades to work with."[1] Finally, the preacher passes to consider his text tropologically, following out the mediæval distich:—

> "Litera scripta docet: quid credas Allegoria:
> Quid speres, Anagoge: quid agas Tropologia."

Flies are sins and one sin can and does do infinite harm; his hearers must be zealous and fervent in spirit for "This will keep off the Flies of wanderings, weariness, dulness, coldness: while the Oyntment boils, or keeps its heat, no Flye will light or venture to remain a blowing time upon it. ..... I have treated you from the first part of the text as Citizens of London and from the second as Citizens of Zion. ..... For although a bad man may be a good Apothecary; a bad Apothecary, a man dishonest in his trade and Profession, cannot be a good Man." So ends this quaint and very telling discourse, one in which there is sound wisdom worthy the consideration of every man who exercises a trade or a profession. The language is homely and the similitudes may be to our hearing farfetched but it never yet did a man any harm to be told boldly of his actual or possible faults.

The treatment of disease and the care of a sick man comprise, of course, far more complicated matters than the mere preparing of drugs. But those qualities which are essential for the professor of the latter are in every way necessary for the professor of the former. Knowledge, diligence, and carefulness are the foundations of the medical profession. The complexity of medicine, by which word we include all branches of the healing art, is so great that no man can be thoroughly acquainted with the whole of it. But if he has built a sure foundation in his student days he can during his professional life

[1] Apothecaries were not allowed to practise medicine until the reign of George II.

raise a superstructure of scientific and practical learning which will enable him to ease many pains, to sweeten perhaps to save, many lives, and to become the trusted friend of many of his fellow creatures. Such a practitioner is not only the man who knows many things but he is fully aware of the limitations of his knowledge. To again quote the old divine: "The higher any man is raised in Reputation, by manifesting himself wise, the more circumspect he is concerned to be to secure his station; for a little Folly will depose him, tho' he reigned over men's minds by the Scepter of his Wisdom. 'Tis ticklish standing on a Pinnacle: and besides the danger of becoming giddy: a small inclining either way may bring him down by the overpoise of his own weight. His height exposes him to all men's view, to most men's envy; and 'tis next to impossible for him to tread awry without severest Censure, who hath so many watchful eyes upon him. ..... The Good Man is the Wise Man and the Sinner is the Fool."

Sea Voyages for the Treatment of Tuberculosis.

OUR Berlin Correspondent this week alludes to arrangements made by the Hamburg-American Steamship Company to organise a scheme for the treatment of tuberculous cases by sea voyages. This renders particularly interesting a communication that we have received from a Scottish physician stating that it is proposed to attempt a new departure in the treatment of tuberculosis by sea voyages. A large sailing vessel will leave this country about the end of January for a long voyage in warm latitudes and will be prepared to convey a "number of consumptives limited to 50, of inebriates, and of other invalids." It is intended that the patients suffering from tuberculosis shall live on deck day and night whenever the conditions of weather permit, so that they may have the advantage of constantly breathing absolutely pure air containing much ozone. During the voyage the vessel will call at, among other places, Gibraltar, the Canary Islands, Rio de Janeiro, River La Plata, Pernambuco, and the West Indian Islands, and opportunities will be given for the patients to land and to see a little of the countries thus visited. Such is the prospect put before a limited number of invalids whose circumstances, physical and social, permit them to avail themselves of it. And while we must be allowed to point out that there are drawbacks as well as advantages to such a scheme we think that every medical man having a case under his charge which appears fit for such treatment should make further inquiry upon the matter.

The treatment of tuberculosis by means of sea voyages has not been so generally adopted in more recent years as formerly. There are several obvious disadvantages which life on board ship entails, the chief of which are the closeness of the cabins during bad weather and the difficulty of providing fresh meat, vegetables, and milk which are so essential for the welfare of tuberculous patients. On a large sailing vessel the diet can in a great measure be arranged satisfactorily, and in the latitudes through which it is proposed to travel fine weather may be expected for a greater part of the trip. But in addition to the difficulties which might arise either from adversity of the elements or monotony of the cuisine it must be remembered that the sanatorium treatment of tuberculosis, as scientifically understood, can hardly be carried out in detail on board ship. The objects of the sanatorium treatment of tuberculosis are to attempt to arrest the activity of the disease, to encourage reparative processes, to bring about compensatory hypertrophy of the sound portions of the lungs, and to sustain the power of the heart. These indications are carried out by rest in the open air during the febrile periods, by a good and varied diet, and by carefully regulated exercise. A quiet life in the open air can certainly be obtained on board ship provided that the elements are kindly disposed. The diet presents some difficulties which, however, may to a great extent be overcome. But when the question of exercise is considered then a drawback to the treatment of tuberculosis by means of a sea voyage becomes apparent. Everyone who has travelled much knows how difficult it is to get adequate exercise on board ship. Theoretically a large amount of exercise may be taken by promenading the deck, but special conditions are required here if the exercise is to be satisfactory, while the pacing up and down speedily becomes monotonous and will only be persevered in by persons of considerable resolution. In the tropics pacing the deck can be undertaken only at certain limited times of the day and every deck is not specially adapted for the purpose. Walking on hilly ground, it is true, is found to be highly beneficial for sustaining the power of the heart and thoroughly aerating the lungs. Certainly the sloping deck of a vessel under full sail cannot correctly be called "level ground," and it hardly forms a surface favourable to systematic exercise. The watchfulness that may be required to preserve balance is found fatiguing by persons subject to nausea and we think that all invalids would be liable to the same sensation; while walking on deck is only pleasurable if a fair amount of unimpeded space both in breadth and length is at the disposal of the walker, factors that do not always prevail. In spite, however, of the possible drawbacks that we have indicated we think that the scheme may afford many sick persons a valuable opportunity. The project for obtaining a maximum amount of sunshine and fresh air free from dust may be found highly beneficial in suitable conditions, but we believe that cases of tuberculous affections of the glands and the joints will, as a whole, benefit more than those in which the lungs are affected, though undoubtedly certain individuals suffering from pulmonary tuberculosis may take advantage of this opportunity with benefit to themselves. Cases of advanced disease should, of course, be rejected by those in charge of the administration of the scheme. Those most suitable for the voyage are young adults with limited or quiescent disease. Cases with a hectic type of temperature are best treated on land, as are those of a hæmorrhagic type and those complicated with dyspepsia and diarrhœa. It is also, we think, essential that each intending traveller should be a good sailor and fond of a sea life.

We notice that patients other than tuberculous are also

to be taken and an excellent therapeutic prospect is thus opened up, supposing that due care is taken against infection. Cases convalescing from pleurisy, empyema, and slowly resolving pneumonia would be especially suitable for such a voyage in search of renewed health. It is fully recognised that many cases of pleurisy with effusion, apparently idiopathic in origin, are really of a tuberculous nature, and nothing could be more advantageous for recovery than a long sea voyage. Young people, too, with a family history of tuberculosis, especially if they exhibit feeble thoracic expansion, would also gain advantage from such a trip. We trust that it will be found possible to keep careful records of the results obtained in the cases of tuberculosis. It would be of great interest to contrast them with those experienced in the sanatoriums in this country and abroad. One of the chief disadvantages experienced by young adults in the sanatorium treatment is the monotony of the life which is usually enforced. On board a sailing ship there would necessarily be periods when a similar monotony would be experienced in spite of all efforts to render the time as pleasant as possible, but the anticipation of visiting fresh lands and viewing new scenes and the reminiscences of the places already seen would go a long way towards dispelling the despondency engendered by routine and it is this moral effect that such a voyage is intended to have upon alcoholic subjects. We think the scheme a good one and we shall watch its developments and results with considerable interest.

Business Cellars.

AN article in a recent number of the *Manchester City News* comments, under the heading "Life and Work in Our Business Cellars," on the conditions under which many men of business are obliged to carry on their work in Manchester, conditions which, alas, are not found only in the great Lancashire capital. Manchester, like other places, has completely abolished the cellar dwellings which were thought half a century ago to be quite fit habitations for the poor, for in all the great towns of England any large proportion of cellar tenements would be regarded as a reproach to the inhabitants. That thousands of civilised beings should have been condemned to make their miserable homes in underground dungeons, in damp, gloom, and stagnant air, seems to us incredible nowadays. But, as our contemporary points out, what is rightly considered a thing to be condemned in the case of the poor and for night occupation is allowed unremarked if these underground places are used by day for business purposes. The only difference is that the warehouses are used during the day but not at night, while probably the inhabitants of the old cellar dwellings exactly reversed the process. Of course, the revival in the best parts of great cities like London and Manchester of cellar tenements is due to the enormous value of land in the centre of such communities. Land in the business parts of Manchester sells at £100 a square yard, that being not at all an excessive price, and land in London and Liverpool—where a crusade against cellar tenements, as our special correspondent says in his letter this week, is now proceeding—is proportionately costly. Our urban by-laws require a certain proportion between the height of a building and the width of the street, so that we cannot in England emulate the building eccentricities of the American towns. But if we cannot build up we can build down and it seems that many warehouses have been built recently in business centres with double cellars, the bottom one being excavated out of the very bowels of the earth. Goods are stored in them and packers and warehousemen work there all day in artificial light (generally gaslight) and with a limited supply of air—necessarily very impure under the usual conditions as to ventilation, or rather the want of it. This matter was brought before the Manchester Chamber of Commerce a few years since when, though all agreed that the matter was one of urgent public importance, nothing was done to prevent a continuation of the abuse of the ordinary laws of living. And Manchester is only one of many towns where the evil custom of working underground persists. In the streets of London, as in those of Manchester, a whole host of underground tradesmen make their living, callous to the gloom and the gas-poisoned atmosphere. Every cellar in some districts is utilised by restaurants and cafés, where the foul air is made fouler by the fumes of cooking, and terrible is the lot of the cooks, the waiters, and the waitresses whose days are spent—too soon spent—in working for what we call "their living" in such conditions. It is a strongly marked inconsistency for the authorities of any city to be so careful concerning dwelling houses, where the workers spend very little more perhaps than a third of the 24 hours, and yet to allow underground warrens for business occupation, extending in very many cases from early morn till late at night, where the conditions are such as to render healthy living impossible. Those of us who walk London with an observant eye know that much of what has been said about Manchester might be said about the metropolis, while no great cities are free from the abuse. Armies of clerks can be seen now and again working in the great metropolitan offices below the level of the road, while many gratings in the pavements belch forth hot and acrid fumes from restaurant kitchens. Much has been done in London to remedy this state of affairs, but much remains before our practical sanitarians. The remedy is, of course, to spread the business part of our cities over a wider area, to let them grow horizontally instead of up and down by removing the necessity for all business to be done at the centre. It is not accurate to attribute all the evils of centralisation to the landowner with his exactions; the state of things is brought about by the struggle of the public to get to the centre, a desire which seems to animate all the workers in the human hive. It is this impulse to get to the centre that will have to give way before the sanitary impossibilities at which we have hinted, and already there are signs that London is beginning to flow back to its periphery. Suburban values have gone up; if the rents have not fallen in the very heart either of business or fashionable resorts the area just without the nucleus has decidedly given way to the competition of outlying parts. Increased facilities for intercommunication and for bringing the environment into closer touch with the contained city will do the rest. Electric tramways, tube railways, motor

omnibuses may all be regarded as indications that decentralisation is taking place. In the first instance their object is readily to convey more persons to the centre, but when such facilities have transformed localities in the environment into thickly populated districts these districts will try in as many ways as possible to be self-sufficing.

Annotations.

"Ne quid nimis."

BLOODLESS SURGERY IN BOND-STREET.

THE quack is always with us, as is well shown by the passage in our "Looking Back" column this week, and while the laws regulating the practice of medicine remain as they are we may safely assume that he always will be. At the present time his position is made a more than usually favourable one from the point of view of his own pocket by the eager collaboration of newspapers intent on sensational paragraphs. The orthodox medical man may not advertise in the lay press but the quack who does ill some of the things that are done well by the orthodox may have his powers trumpeted forth high and low. It is an anomalous position that might have moved the pen of Swift or Rabelais to ridicule. Because a man has never learned to do certain things or received an official guarantee of his ability, therefore he may tell all the world that he can do these things—more, he may reap the foolish world's guineas as fast as they choose to sow them. These observations are suggested by a recent visit to the "bloodless surgeon" whose doings in Bond-street have prompted reporters' ravings in certain daily newspapers of late. We witnessed a remarkable exhibition not so much of Mr. Barker's powers but of what people are willing to endure at the hands of a quack when the same treatment would be pronounced as intolerable cruelty in the hands of the medical man. We may say at once that Mr. Barker appeared to us a hardworking individual believing in himself. He is capable of doing good in certain cases, cases in which medical men upon scientific methods are doing more good. He is capable of doing great harm in other cases and we are in little doubt that he does it. We saw cases of adhesions, of old Pott's disease, of old tuberculous hip disease, and of latent curvature treated, and how much damage was done can only be told when a certain period of time has elapsed. We saw much done with great pain that is in hospitals and private surgeries daily effected painlessly. We saw several cases rejected on the ground that no good could be done and in these cases we saw no fee taken.

THE TEMPLE OF ASKLEPIOS AT EPIDAUROS.

IN a volume of archæological memoirs recently published in honour of M. Perrot there is an essay by M. Cavvadias who has for many years so successfully conducted the excavations at the temple of Asklepios at Epidauros. This essay treats of the cure of diseases at that sanctuary and the conclusions arrived at, if strictly correct, are extremely important in connexion with the history of ancient medicine among the Greeks. Pausanias, the traveller, states that he saw at Epidauros, in, or at the approach to, the Heroön, six stela upon which were inscribed the names of patients, the malady of each, and a history of the cure achieved. M. Cavvadias has found four of these, one of them bearing an inscription which originally consisted of about 130 lines of 50 letters each but is now very seriously mutilated and defaced. The point of the memoir written by M. Cavvadias is that this inscription confirms those which he has previously edited by showing that in no case were the cures effected at the Heroön of Epidauros secured by medical treatment. His statement is so emphatic that it will be well to quote it verbatim; he says: "Dans le Sanctuaire d'Esculape à Épidaure on ne pratiquait pas une médecine, ou une thérapeutique proprement dite." He goes on to say that the cures of the sick during the Greek epoch were attributed entirely to the direct intervention of Asklepios. The Heroön was not a place for study in which medical men received a training founded on observation and experiment; it was a "holy place" where the patient himself invoked the deity's protection, hoping not for help from human skill but for divine intervention. This being so, M. Cavvadias argues that it is an error to suppose that in Greek times medicine was practised at the Asklepieia. All the texts referring to medical cures at these temples date only from Roman times. The later classical authors have confounded what took place at these sanctuaries in the Roman period with the practice in the Greek era. Strabo asserts that Hippocrates profited by his studies at the Temple of Asklepios at Cos but M. Cavvadias believes that the inscriptions there were no more scientific than those which he has unearthed at Epidauros and if this were so Hippocrates could not have obtained any useful medical knowledge from them. It was only under the Romans that the hierarchy of the temples availed themselves of medical knowledge, as is shown by the inscription of Apelles found at Epidauros.

CHOLERA IN PERSIA.

A REPORT dated October, 1904, received at the Foreign Office from Mr. J. R. Preece, C.M.G., His Majesty's consul at Ispahan, makes reference to the epidemic of cholera which has been ravaging Persia all through the summer. It travelled to the north through Kermanshah and Hamadan to Kom and thence spread north and south to Tehran and Ispahan, while another course was taken *viâ* the Karun to the head of the Persian Gulf and thence to Shiraz. The two streams of infection met at Komishah, 45 miles south of Ispahan. "It has," continues Mr. Preece, "been somewhat severe in the villages of the Ispahan district, but Ispahan itself was for a long time immune. The late Dr. Tholozan, who was chief physician to Nusruddin Shah and on the staff of the French army and had given a great deal of attention to the incidence of epidemic diseases in the East, told me that from his studies he had deduced the fact that in Persia Ispahan was the last place to be attacked, and when attacked it generally escaped much easier than other places. He imagined that this was due to its central position, height, and the extreme dryness of its climate. It is possible that these may have some influence on the course of an epidemic here, but I think there are other causes which account for the immunity of Ispahan: 1. Ispahan is almost entirely served by wells for drinking water, and although generally there is plenty of water from the Zaenderud running through the various canals which traverse the town from west to east, yet the well water is preferred. This year, however, the canals have been empty. 2. All the latrines of the place are small and shallow and are not, as in other places, simply wells sunk to a depth of many yards in the ground with four leads radiating from them. These are sealed up when filled and a fresh one dug, as is the custom in all other towns I have known in Persia. As the Persians always use water these deep shafts are full of liquid filth which permeates the subsoil, thus impregnating it throughout with fœtid matter. Periodically the latrines are emptied out and night soil is mixed with dry earth and exposed to the sun for some days and, after being thoroughly disinfected, is used as manure for tilling the fields. The contents of the latrines are sold by the

housewife and this is about the only ready-money transaction which takes place in Ispahan. Thus, while Tehran with a population of some 250,000 people has lost, during this epidemic, something like 25,000, and Shiraz with a population of 45,000 has lost about 5000, Ispahan, with 80,000, has not lost more than 500 at the outside." In addition to the information contained in Mr. Preece's report we learn from other sources that the Persian epidemic is attracting attention in Russia. On Dec. 15th, 1904, at a meeting of the Association of Russian Medical Practitioners, Privat-Docent S. I. Slatogoroff gave a lecture on his experiences in connexion with the epidemic of cholera in Persia. He was the chief of the staff sent out by the Russian Minister of Finance to combat the disease. He said that the cholera made its appearance early in the spring of last year in Persia and was most prevalent in the neighbourhood of Shat-el-Arab where it was a permanent endemic under conditions similar to those existing on the Ganges. After reaching Tehran it spread to the north, threatening Tabriz and Magaru, the sanitary conditions of which were most favourable to the propagation of the disease. Dirty water flowed through the streets and served for drinking purposes. In the streets there were trenches filled with human bodies and excrement. There was no medical assistance at hand except that obtainable from native practitioners. The mortality reached 80 per cent. and more but the Russians succeeded in reducing it to 30 per cent. by means of an extensive administration of stimulants such as camphor and caffeine, together with subcutaneous injection of solutions of table salt. In conclusion Dr. Slatogoroff strongly insisted on preventive inoculation, saying that he inoculated about 1500 persons of whom but 27 (1·9 per cent.) fell ill and four died; whereas of the uninoculated 9·7 per cent. sickened. In Tabriz alone 15,000 persons died in two months and the total for all Persia was 150,000 deaths. He feared for Russia in the coming year and distrusted quarantine.

SUPPURATIVE MYOSITIS DUE TO THE GONOCOCCUS.

IN recent years the possibility of widespread infection of the tissues by the gonococcus producing lesions such as arthritis, pericarditis, endocarditis, and abscesses has been shown. Among the rarest complications of gonorrhœa are affections of muscles which may take the form of myalgia, atrophy, or localised inflammation. In the *Johns Hopkins Hospital Bulletin* for December, 1904, Dr. N. M. Harris and Dr. L. W. Haskell have reported the following case of suppurative myositis due to the gonococcus. A married woman, aged 34 years, was admitted on July 3rd, 1902, to Dr. Osler's ward. She had been married 13 years and had four healthy children. Since the birth of the last child, 11 months before, she had suffered from leucorrhœa and had not menstruated. Four weeks before admission a painful lump of about the size of a hen's egg appeared in the right calf. It subsided, leaving a painful swelling. On examination a tender, boggy swelling of about the size of a hen's egg was found at the junction of the sacral and lumbar regions. It was said to be of three or four months' duration. The right lower limb was held semi-flexed and the calf was much swollen, measuring 34 against 28·5 centimetres on the other side. The calf gave a boggy and fluctuating feeling and was very tender. The patient looked pale, sallow, and rather emaciated. The red corpuscles were 3,648,000, the white were 16,000, and the hæmoglobin was 64 per cent. On the 7th the calf was aspirated with a hypodermic syringe and yielded a small quantity of pus which contained cocci and diplococci staining well and decolourised by Gram's method. Cultures showed that they were gonococci. On the 8th the swelling in the sacral region was incised and drained. It was found to be an abscess extending under the erector spinæ on both sides. There was considerable sloughing of muscles, especially above the attachments to the pelvis. The abscess cavity was swabbed with pure carbolic acid and alcohol and packed with iodoform gauze. The abscess in the calf was also incised. It was under the gastrocnemius and soleus muscles and extended up into the popliteal space and contained one and a half pints of pus. There was considerable sloughing of these muscles and of their tendons. The temperature, which had ranged from normal in the morning to 102° F. in the evening, became normal. The patient was carefully questioned as to symptoms of gonorrhœa but beyond the leucorrhœa no history of them could be obtained. The myositis evidently was not secondary to arthritis or tenosynovitis, for she had never complained of her joints. This case is important because, unlike several of the few cases which have been reported as examples of gonorrhœal myositis, the bacteriological evidence was complete. The recorded cases seem to show that gonorrhœal myositis may be due to toxins absorbed into the blood or, as in this case, to implantation of the gonococci in the muscles and that the inflammation may be of all grades of severity, from an early resolving painful induration to such extensive suppuration and necrosis as that described above.

THE MEDICAL DIRECTORY FOR 1905.

THE 1905 issue of Messrs. J. and A. Churchill's valuable Medical Directory appeared in the last week of the past year. One new subject appears in the useful "Abstract of the Principal Laws affecting the Medical Profession"—namely, "Registration Fees." The total number of names for 1905 is 38,361, an increase of 572 over the total of 1904. Of departmental increase the London list shows 6397 names as against 6328 in 1904, the English provincial list 16,718 as against 16,553, the Welsh list 1236 as against 1207, the Scottish list 3733 as against 3696, and the Irish list 2632 as against 2629. The list of registered practitioners resident abroad contains this year 4448 names as against 4292 last year, and the list of service members 3101 as against 3016. The largest increase is shown in the "too late list" which this year contains 96 names as against nine last year. There is thus an increase in every department of the profession. The Directory is a work which is indispensable to members of the medical profession and of great use to those of many other classes and we congratulate the publishers on its prompt publication.

THE NUISANCE ON THE FORESHORE OF BELFAST LOUGH.

Mr. P. C. Cowan, chief engineering inspector to the Irish Local Government Board, and Mr. D. Edgar Flinn, one of its medical inspectors, sat in Belfast on Dec. 14th, 15th, and 16th, 1904, to make inquiry with regard to the petition of the Castlereagh district council praying for a provisional order to form a united district for the purpose of abating a nuisance on the foreshore of Belfast Lough. That a nuisance exists was amply proved by medical and chemical evidence and it is due to the existence of a seaweed, the "ulva latissima,' which feeds on sewage and gives off sulphuretted hydrogen; the nuisance is clearly caused by unpurified sewage being allowed to flow into the lough, those on the sides of Belfast Lough saying it is due entirely to the Belfast sewage while the Belfast council retorts that the townships on each side of the lough contribute their share. No feasible scheme to remedy the nuisance was put forward and it is likely that one of two schemes only will be of any use. The one is to reorganise completely the main drainage scheme of Belfast which is totally unfitted for the present

size of the city and to carry the sewage down by means of conduits along each side of the lough, one opening at Blackhead on the north-west and the other at Donaghadee on the south-east of the lough, into each of which the drainage of the boundaries of the lough would empty. In this way the waters of the lough would be kept pure. The other plan is, in addition to the formation of bacteria beds, to purify the crude sewage, to carry out a scheme of reclamation of slob lands on each side of the lough. Banks would be constructed from the Kinnegar to Holywood point on the south-east side and from Greencastle on the other side to a corresponding point opposite; these would form the north-eastern boundaries of the County Down and County Antrim reclamation schemes. Once the banks were completed ample material could easily be provided for the gradual work of filling in and reclamation. The sewage, properly treated, would be largely carried away by the current. No doubt this would be a costly undertaking but it would be final and effective and the reclaimed land would constitute a valuable asset so as to recoup whichever authority—harbour, corporate, or rural—carried it out. All other remedies are only partial and piecemeal and will never rectify the present deplorable condition of an otherwise beautiful lough.

THE DISPLAY OF PHYSICAL INFIRMITY AS AN INCENTIVE TO ALMS-GIVING.

THE exhibition by professional mendicants of the results of injury and of genuine physical conditions of a painful nature as well as the display of pretended mutilation and simulated deformity are familiar to all who read the police reports, as well as to medical men, and the methods of the malingerer were dealt with in detail in THE LANCET of Jan. 7th, p. 45. We may sometimes even wonder that the benevolent public should so readily consent to be imposed upon when they are so frequently warned but there seems to be no limit to the credulity of soft-hearted persons who when face to face with what they believe to be great suffering in others do not pause to consider the effect that their alms-giving may have. They forget that charitable institutions exist for the relief of genuine suffering in the poor and that, on the one hand, their money bestowed in aid of hospitals will do far more effective good than when given directly to an individual, whereas, on the other, indiscriminate giving encourages begging on the part of impostors. The recent case of a pretended paralytic in the City has no doubt called attention to such frauds as his, and to the tricks of other members of the begging fraternity, but such misdirected ingenuity as theirs has been a source of profit for centuries, although from time to time detection has been followed by penalties more or less severe. The following instances are to be found in the late Sir Walter Besant's "London in the Time of the Tudors," and one of them shows that then, as now, the medical profession took an interest in their exposure, although the medical man nowadays can hardly act so vigorously on his own initiative as the surgeon described. If he had had to invoke the aid of the police and to waste time in giving evidence he would very likely have left the "dommerar" in peace. Perhaps the fact that the punishment of the detected impostor has grown milder accounts for his continued existence. Sir Walter Besant writes: "The counterfeit crank was a pretended epileptic. He carried a piece of white soap which he put into his mouth to represent the epileptic foam. Harman draws a lively picture of such a man. He begged about the Temple, his face was covered with blood and his rags with mud and dirt. At noon he repaired to the back of Clement's Inn, where in a lane leading to the fields he renewed the blood on his face from a bladder which he had with him and daubed his jerkin and hose again with mud. A certain printer watched him. In the evening he took a boat and crossed the river. The printer followed him and caused him to be taken up in St. George's Fields as a common beggar. They took him to the constable's house, where they stripped off his rags, showing him to be a healthy and comely man with no sign of any disease; in his pockets they found the sum of 13*s.* 3½*d.*; they gave him an old cloak of the constable's, in which he sat by the fire and drank three quarts of beer, after which he threw off the cloak and ran away naked. But they found out where he lived—viz., in a 'pretty house, well stuffed with a fair-joined table and a fair cupboard garnished with pewter.' So they took him to Bridewell where they painted him, first in his disguise and next in his proper attire. Then they whipped him through London and brought him back to Bridewell, where he stayed till they thought fit to let him go. The 'dommerar' pretended to be dumb, he carried a forged licence, and generally pretended to have lost his tongue. One of them was, unluckily for himself, caught by a surgeon who proved that he had a tongue, though he had neatly folded it away somewhere, and as the fellow would not speak the surgeon tortured him till he did. This done they hailed him before the magistrate who administered the usual medicine. The Abram man was one who feigned to have been mad and to have been kept in Bedlam for a term of years."

THE ROYAL SANITARY INSTITUTE.

THE thirty-ninth course of lectures and demonstrations for sanitary officers will begin at the Royal Sanitary Institute, Parkes Museum, Margaret-street, London, W., on Monday, Feb. 13th. The course is divided into two parts, the first consisting of four lectures on elementary physics and chemistry and 21 lectures on hygiene, public health, and the duties of sanitary inspectors. The second part, consisting of seven lectures, will commence on Wednesday, April 12th. The lecturers on elementary chemistry and physics are Dr. E. J. Steegmann, medical officer of health of Heston, Isleworth, and Dr. J. Priestley, medical officer of health of Lambeth. Among the lecturers during the month of March are Dr. G. Newman, medical officer of health of Finsbury, and Dr. H. R. Kenwood, medical officer of health of Stoke Newington, the former taking for his subject, on March 1st, 3rd, and 6th, the duties of a sanitary inspector and the latter dealing with infectious diseases, water, and statistics on March 9th, 10th, 13th, and 15th. Mr. W. Hunting will deliver the opening lecture of Part II. on April 12th, his subject being the signs of health and disease in animals destined for food and tuberculin and other tests; Mr. James King, veterinary inspector of the Metropolitan Cattle Market, will give on April 13th a demonstration on diseased meat; and Dr. E. P. Manby, medical inspector to the Local Government Board, on April 26th, 27th, and 28th will deal with, amongst other things, the preservation and storing of foods, the hygiene of cowsheds and dairies, and the laws and regulations affecting the inspection and sale of foods. In connexion with these lectures a series of inspections and demonstrations will take place from time to time. For example, on Feb. 18th a party will be conducted over the Willesden Parish Infirmary by Mr. A. Saxon Snell; on Feb. 25th the Battersea disinfecting station, mortuary, and shelter will be inspected, the demonstrator being Dr. G. F. McCleary, medical officer of health of Battersea; and Mr. J. R. Leggett will conduct on March 2nd a demonstration of bookkeeping as carried out in a sanitary inspector's office at Islington. On April 19th Mr. R. Glover will superintend an inspection and a demonstration at Messrs. Harrison and Barber's knacker yard, Whitechapel. The fee for the complete

course is £3 3*s*., or for Part I. £2 12*s*. 6*d*. and for Part II. £1 1*s*. The Saxon Snell prize, which is to be awarded by the council of the Royal Sanitary Institute at intervals of three years to encourage improvements in the construction or adaptation of sanitary appliances, is offered for the first time this year. It will consist of £50 and a medal of the institute for the best essay on Domestic Sanitary Appliances, with Suggestions for their Improvement. Particulars of the conditions governing the competition can be obtained from the secretary of the institute.

INSANITARY AREAS IN SOUTHWARK.

THE facts of a case reported in the daily press of Dec. 31st, 1904, in which death was, no doubt, accelerated by insanitary surroundings, give us food for serious reflection. We are so much accustomed to evidences, in the way of torn-up roads and torn-down houses, of attempts to enlarge and to improve London generally that we are apt to forget the unseen places where any enlightening efforts on the part of the London County Council are yet far to seek. Such spots, unfortunately, still exist. Nor can we applaud any æsthetic endeavours of the Council in the direction of wide thoroughfares or beautiful buildings or lovely statues so long as overcrowding exists within the area of the Council's jurisdiction or so long as a single death can occur in such circumstances as were investigated by Dr. F. J. Waldo on the occasion to which we are referring. The death took place at King's-court, Borough, which lies in an area known as Erith-place. This area is three acres in extent and holds about 850 persons. It is one of three that were officially scheduled as unhealthy and reported to the London County Council in 1898. Yet for some reason, possibly not unconnected with the unprofitable nature of Erith-place as a building site, while the two other areas received due attention the Erith-place area, the worst of the three, has continued to be neglected. The area includes several cul-de-sacs and a network of narrow courts hemmed in by tall buildings. In Erith-place it is possible to shake hands from house to house across the court. In such a neighbourhood disease is rife and thrives apace. There is no remedy but the destruction of such a spot and the very existence of the area is a reproach to the London County Council. We are glad to notice that a statement was made by one witness at the coroner's inquest to the effect that the area is to be cleared. We agree with the coroner, Dr. Waldo, who was "very glad to hear it."

THE MEDICINE-MEN OF CENTRAL AUSTRALIA.

Messrs. Spencer and Gillen's admirable books on the savages of Central Australia and Queensland are quite as delightful to the social satirist as to the serious anthropologist. It would seem that in their obscure way the hitherto despised and neglected "black fellows" of Australia have for long ages been making game (unconsciously, of course) of much that in Europe is treated with solemnity. Molière himself could not have been more severe upon medical men than are the black Queensland practitioners upon themselves. Their etiquette, which is very elaborate, is conceived in a spirit that would have delighted the author of "Erehwon." For instance, until he is well stricken in years the medicine-man of the Arunta and Kaitish tribes must eschew hot drinks and eat no fat, and the young Warramunga medicine-men must drink very little water and abstain from all native dainties, such as big lizard, native cat, wild dog, and "euro." Messrs. Spencer and Gillen knew of a case in which an elderly practitioner died and the cause of death was at once set down to furtive indulgence in this last-named food. When once they are old and grey-haired Warramunga medicine-men may eat anything and can compel their younger *confrères* to bring them in supplies of the forbidden delicacies. "In fact, the old doctors, and especially the particular man who made him into a medicine-man, can kill a younger one who fails to comply with this rule." Both old and young practitioners, however much they may bully each other behind the scenes, maintain a very firm and consistent attitude towards the public. All disease is set down to the existence in the system of "foreign bodies." The sick man is always held to have a bone, not necessarily in his leg, but anywhere inside him. The object of the medicine man is to locate this bone and to point out its wanderings—from the forehead downwards—to an open-mouthed audience. Having done so for some days, he extracts or exorcises it and finds it at a distance where he has previously buried it. The Anula medicine-men, however, who allow women to practise, are degenerates, or they mark an earlier stage in development, for they do not profess to extract bones but to introduce them below their victims' skins. They are necromancers pure and simple. Strange to say, it is not easy to become a medicine-man. The initiation is long and severe and involves visions, during which the aspirant fancies he exchanges intestines with a tutelary spirit. The power of the medicine-man resides almost entirely in an amulet worn in the nose. This is manufactured by some veteran practitioner out of fur string and is said to be the work of certain very powerful old serpents, reptiles as much connected with medicine among the Australian aboriginals as in ancient Greece.

AMŒBIC DYSENTERY.

AN instructive report has been issued by the Government Laboratory, Manila, on the subject of amœbæ and amœbic dysentery.[1] The first part by Dr. W. E. Musgrave and Mr. M. T. Clegg deals with the cultivation of amœbæ and their etiological significance. On a culture medium consisting of meat extract and agar, rendered alkaline to phenolphthalein to the extent of 1 per cent. and sometimes with the addition of a trace of peptone, it was found possible to cultivate various amœbæ. The amœbæ were isolated by a modified method of plate culture; the material containing the amœbæ is well spread over a sterile plate of the agar medium and an isolated amœba having been located by means of a Zeiss A A objective this is replaced with a clean dry Zeiss D D lens which is then lowered on to the amœba. In many instances the amœba adheres to the lens and may then be transferred to a fresh plate of agar and in this manner a pure cultivation may be obtained. It was, however, found impossible to grow the amœbæ unless bacteria were also present. Various bacteria will serve this purpose, e.g., the spirillum choleræ, but often the amœbæ exhibit a selective action for certain bacteria and without these refuse to grow. All the amœbæ studied developed best at room temperature. With regard to the etiological significance of amœbæ Dr. Musgrave and Mr. Clegg believe that all species are, or may become, pathogenic. In amœbic dysentery the amœbæ can be detected with certainty only when they show their characteristic motility on a warm stage and they are best demonstrated in the fluid portions of the stools after the administration of a saline cathartic. In the second part of the report by Dr. Musgrave the treatment of amœbic dysentery ("intestinal amœbiasis") is dealt with. The various methods of treatment are discussed and a word of warning is given on the use of ipecacuanha which Dr. Musgrave considers may be dangerous in the case of patients much reduced in strength by long continuation of the disease. When bismuth and similar substances are used enemata may be inefficient owing to the bowel being coated with a sticky deposit which shou'd first be cleared away with a saline purgative.

[1] No. 18, Bureau of Government Laboratories, Manila, 1904.

THE LANCET RELIEF FUND.

For Members of the Medical Profession and their Widows and Orphans when in Distress.

——:o:——

ALMONERS.

THE PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE PRESIDENT OF THE GENERAL MEDICAL COUNCIL.

THOMAS WAKLEY, F.R.C.S. Eng.

THOMAS WAKLEY, Jun., L.R.C.P. Lond.

HON. AUDITOR.

SIR HENRY PITMAN, M.D. Camb., F.R.C.P.

——:o:——

THIS FUND will be provided year by year in the month of January to the amount of at least £300 solely by the Proprietors of THE LANCET, and administered free of cost, for the purpose of affording immediate pecuniary assistance to Medical Men, or their Widows and Orphans, *in cases of Acute Distress and Emergency*, by the grant of money by way of loans free of interest, or gifts, as the circumstances of the various cases may require.

Applicants must satisfy the Almoners of the Fund that they are qualified under the following regulation:—

* "The recipients shall be such persons as satisfy the Almoners that they possess one or other of the following qualifications—that is to say: (*a*) That the applicant holds a registered medical qualification, and that he has fallen into pressing need of immediate pecuniary relief; or (*b*) That they are persons who have been, previously to the date of application, legitimately dependent upon some person holding a registered medical qualification, and that they have pressing need of immediate pecuniary relief."

(*In the case of Widows and Orphans, in order to come within the scope of the Fund, the death of the Husband or Father must have been of recent occurrence.*)

To ensure the utmost despatch, the "Application Form" upon the other side should be filled up and forwarded (in an envelope superscribed "THE LANCET Relief Fund") to the Secretary, Mr. CHARLES GOOD, THE LANCET Offices, Strand, London, W.C.

The application *must* be accompanied by two separate Testimonials (originals, not copies)—one from the Clergyman of the Parish or other resident Minister of religion, and one from a registered Medical Practitioner. Each Testimonial *must* state—(1) that the application addressed to the Almoners has been read; (2) how long the writer has known the applicant; (3) that the writer believes the statements made by the applicant to be perfectly truthful, and such as may be acted upon without further inquiry; and (4) *may* state any other particulars that the writer desires to place before the Almoners.

Testimonials written for the Almoners of the Fund will in no case be returned.

Private and Confidential.

APPLICATION FORM.

To the Almoners of The Lancet Relief Fund.

The applicant should here state shortly:—

1. The nature of the emergency that has arisen.

   (*In the case of Widows and Orphans the full names and date of death of the Husband or Father must be given.*)

2. The circumstances out of which it has arisen.

3. The amount of the grant desired, and whether by way of loan (free of interest) or of gift.

4. If by way of loan, state when the loan will be repaid; and from what source the funds to repay it are expected to be forthcoming.

5. Whether the applicant is entitled or able in the circumstances which have arisen to look to any other source of assistance; and if so, what is the expected nature and extent of such assistance.

6. Whether the applicant is receiving, or has received during the past six months, pecuniary aid from any Medical Charity.

7. State how the applicant is qualified to receive assistance; vide regulation * on first page.

8. Particulars of:

Applicant's age

Number in family

How many are self-supporting

How many are partially dependent

How many wholly dependent

Applicant's Signature

Address

Date

No. _____

THE LANCET RELIEF FUND

Name _____

Address _____

_____

Received _____

Considered _____

Result _____

Date _____

Directions are given for the proper use of enemata and cold solutions of quinine salts—1 in 1500 to 1 in 750—are considered to be the best of all. A useful survey of the literature of the subject is given and the report is illustrated with a number of plates.

THE MAKING AND UPKEEP OF ROADS.

AT first sight there would not seem to be much of a medical interest about the above-mentioned subject. But there can be no question that good roads are an important factor in the health of the people, primarily from a sanitary point of view in towns and secondarily in the country because on good roads depends in great measure agricultural prosperity and on this in its turn depends the question of the overcrowding of towns. Anyone who has ever been in France must recognise how far superior in most cases are the main roads of that country to our own. A London macadamised road is a thing to shudder at. Fortunately there are not many of them but such as exist are a disgrace to a civilised community. They are badly laid to begin with and they are never kept up. The London vestry or borough council's idea of the way to lay a macadamised road is as follows. First of all prepare the ground by roughly grubbing up the old road with a "scarificator." Then take large lumps of granite weighing roughly five or six ounces each and dump them on the scarified roadway. Then run a steam roller over them and cover deficiencies with sand. The pieces of granite being much too big to bind act as levers and tilt when any traffic passes, the sand is washed away by the first shower and in a few weeks the road "pockets." It is therefore full of holes which are generally puddles, especially if the road is watered, and contain decomposing dung. No more care is taken and the roadway is left to itself until it gets too bad even for the municipal authority to bear it any longer. Then out come the scarificator, the large lumps of granite, and the sand and the process begins again. If the road were properly laid at first according to Macadam's instructions and were to be tended by having hollows filled up as they appeared it would last much longer than it does at present and the surface would be good. An evening contemporary has this week published a most interesting article upon the French Department of Ponts et Chanssées, in the charge of which are most of the roads of that country. It is, we suppose, too much to hope that this country will ever have a similar department but the London County Council might at all events organise a department seriously to take in hand the roads of London, with whatever substance they may be paved. As for rural roads, the bicycle and the motor-car have done a good deal to raise their condition but even now it entirely depends upon the frame of mind of the local authorities as to whether a rural road is good or not and many of them seem to consider that "work on the roads" is a fitting method of employing out-of-work unskilled labourers without considering that to keep a road in order requires a good deal of skill. The influence which a well-laid and cleanly roadway has upon the health of town dwellers is so obvious that it need not be insisted upon further.

THE DESTRUCTION OF ORGANIC MATTER IN TOXICOLOGICAL INVESTIGATIONS.

IN the Russian *Gazette of General Hygiene, Forensic and Practical Medicine* Professor A. F. Grigorieff describes a method for the disintegration of organic material in toxicological analysis. The organic matter (intestines and so on) is first dried at from 70° to 80° C. and then pounded in a mortar. Ten grammes are then placed in a retort and submerged in ten times its volume of strong sulphuric acid. The mixture is then carefully heated, all frothing being prevented as far as possible, until the liquid is of a brownish colour. After cooling slightly ten cubic centimetres of fuming nitric acid are added and the liquid is boiled again. Under this treatment the liquid gradually assumes a yellowish colour. After a time another addition of nitric acid is made and the heating is continued. If the liquid does not become clear and of a bright yellow colour more nitric acid is added. At this point another ten grammes of the organic material may be added and the operation as described repeated. More material may be put into the retort, care being taken to keep an excess of sulphuric acid present. The liquid is then vigorously boiled and the oxidation may be considered to be finished when the evaporation of the nitric acid vapours ceases and when, after being cooled, the liquid becomes transparent and colourless. When much fatty matter is present a larger quantity of nitric acid is necessary and it may be freely added at the commencement of the process. The acid liquid is diluted with water and boiled until no more brown vapour issues. The usual chemical reagents such as sulphuretted hydrogen gas may then be applied for the purpose of separating the metals. Professor Grigorieff experimented with small quantities of most of the mineral poisons in organic material in this way and succeeded in detecting their presence even when they occurred in minute quantities. The process recalls that devised by Kjeldahl in which the destruction of organic matter by strong sulphuric acid is effected and at the same time the nitrogenous compounds are converted into ammonia which may be expelled and estimated and thus the quantity of nitrogen in the original material determined.

ELEVATION OF THE HIPS IN THE TREATMENT OF PLACENTA PRÆVIA.

IN the *New York Medical Journal* of Sept. 17th, 1904, Dr. A. King calls attention to a method of treating placenta prævia which does not seem to have been described previously and which from its simplicity and efficacy appears to be valuable—checking of the hæmorrhage by elevation of the hips. He relates the case of a surgeon who saw in consultation a case of placenta prævia. For several hours there had been slight hæmorrhage and pains. The vagina had been packed with iodoform gauze which was saturated with blood. The surgeon removed the pack and found a marginal attachment of the placenta, the os beginning to dilate and the head presenting. The patient was anæsthetised with ether and placed in the lithotomy position at the edge of the bed. The castors were removed from the bedstead and the side to which the patient had been brought was elevated by means of two chairs placed under the legs so that the patient's body formed an angle of 45° with the horizontal. The canal of the pelvis was then easily accessible to manipulation. The action of gravity by preventing loss of blood and the escape of amniotic fluid facilitated turning. The vagina and the cervix were dilated and the membranes were ruptured over one foot which was brought down. The entire delivery of the child took less than five minutes and not an ounce of blood was lost. A practitioner who heard of the case treated another one with the same excellent result. Elevation of the hips suggested itself to the surgeon because he knew of the great saving of blood due to this position in pelvic operations, especially when veins are cut, and that the bleeding in placenta prævia is principally venous. In hysterectomy when using Trendelenburg's position he never closed the abdominal wound without previously lowering the patient to make certain that hæmorrhage would not follow the change of posture, for he had frequently found that blood welled up from some vein, though not a drop escaped when the hips were elevated. It is certainly surprising that

the principle of elevation of the bleeding point, which is so well recognised in the treatment of venous hæmorrhage, has been ignored in the treatment of placenta prævia.

WE record in another column the death of Professor Sklifosovski, which has just occurred at Moscow. Professor Sklifosovski, whose scientific position was a very brilliant one, became personally and favourably known to many of his European colleagues during the Twelfth International Medical Congress which was held in Moscow in 1896. Professor Sklifosovski was president of the organising committee of the Congress and to his efforts was largely due the fact that the immense gathering passed off so successfully.

THE medical officer of health of the Cape Colony states that during the week ending Dec. 17th, 1904, no case of plague in human beings was discovered.

ANNUAL REPORT OF THE MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD.

SECOND NOTICE.[1]

IN our first notice we dealt with what may be termed the epidemiological portion of this report—that is to say, with Appendix A which relates to the etiological investigations carried out by the inspectors of the medical department of the Local Government Board. We now propose to deal with Appendices B and C in which an account is given of the auxiliary investigations which are conducted year by year by bacteriologists and others specially employed under the direction of the medical officer of the Board.

The Pathology and Etiology of Rat Plague and other Infectious Rat Diseases.

The part played by the rat in the diffusion of plague has been variously estimated by different observers. Some attribute to the rat a very large share in the causation of the disease in the human subject, others regard this rodent as exercising quite a minor influence in this direction. Dr. E. E. Klein has set himself to ascertain by means of a carefully conceived series of experiments what is the precise significance of plague in rats and what are the channels by which the disease in rats is conveyed from rat to rat and from rat to man. In discussing the pestis bubonica which occurs naturally in rats Dr. Klein refers to the disease which prevailed among rats at the Cape of Good Hope and which was believed by Dr. A. Edington not to be plague but a form of hæmorrhagic septicæmia, such as swine fever, fowl cholera, and so on. The result of the work carried out by Dr. Klein with material sent to him by Dr. Edington has led the former to the conclusion that the organism in question was that of plague although it presented certain unusual morphological and cultural characteristics.

As regards the method by means of which the plague is spread from rat to rat the experiments of Dr. Klein do not tend to support the view which was put forward by Simond, and which has been strongly supported by others, that the disease is, to any large extent, conveyed from rat to rat by means of fleas. Dr. Klein has been unable to repeat the experiments of Dr. F Tidswell who found that an emulsion of fleas taken from a "plague-dead" rat was capable of conveying plague to other rats. Fleas may, in Dr. Klein's view, occasionally convey plague from rat to rat, but this is not, he thinks, at all a common method of conveyance. After keeping on numerous occasions the rats in the same cage for some time in order that their initial fights might cease one of the animals was inoculated with plague from which it subsequently died, but in no single instance has the healthy rat succumbed to the disease until long subsequently; to test its susceptibility it was inoculated directly and died. Moreover, the rat first inoculated has in numerous instances had opportunity of infecting by means of its fleas the rats kept in adjoining wire cages; but here, again, no such flea-borne transference has ever been observed. In Dr. Klein's view one of the most common causes of infection from rat to rat is by means of the wounds and abrasions which are to be found on nearly all rats in the wild state. Such an abrasion may easily become inoculated by articles soiled by the excreta of rats ill with plague. He thinks, too, that many rats are inoculated owing to their fighting propensities and to the fact that rats ill with plague are extremely irritable. In the case of a rat afflicted with pneumonic plague the oral mucus would be thus a ready means of infection.

But perhaps the most interesting part of Dr. Klein's contribution to the present volume is that which relates to the diseases other than plague from which rats are liable to suffer. It is certainly not improbable that in the past much unnecessary alarm may have been caused by illness among rats which was not due to plague. Dr. Klein refers in the first place to the disease which is caused among rats by the Danysz bacillus by means of which it was sought to destroy the rats in the Paris sewers. There is, however, no difficulty in distinguishing this bacillus from that of plague. In the case, however, of the s.s. *George Royle*, on board of which many dead rats were found while the vessel was being unloaded at Bristol, the case was very materially complicated by the fact that the vessel came from Smyrna which was at that time a plague-infected port. Much alarm was very naturally caused by this circumstance but it was eventually determined by Dr. Klein that the bacillus, which had presumably caused the death of the rats, was not that of plague but a bacillus which he termed bacterium Bristolense. Dr. Klein's communication is of considerable value as indicating caution in arriving at the conclusion that a fatal disease among rats on board ship is of necessity due to plague.

A Bacteriological Test for the Pollution of Air by Saliva.

For many years there has been a growing discontent among teachers of preventive medicine as to the use of the carbonic acid index for estimating the pollution of the air of rooms, factories, and other places. But in the absence of any better standard such test has had to be continued notwithstanding the fact that there are many other sources of this gas than man and animals. Within recent years the Germans, and notably Flügge, have shown with what facility an easily recognisable organism, such as bacillus prodigiosus, can be conveyed through the air by acts of loud talking, coughing, and especially sneezing, and they have also shown by the aid of carefully arranged Petri dishes that during acts of coughing and sneezing persons suffering from advanced pulmonary tuberculosis may disperse the tubercle bacillus for considerable distances both before and behind the seat which they occupy. It is important, however, to observe that in ordinary quiet speaking or breathing few, if any, organisms are given off by the breath. But both these series of experiments related to organisms which may be regarded as abnormal or extraneous in so far as the healthy human being is concerned, and hence Dr. Mervyn H. Gordon has been led to undertake an investigation "to determine whether it is possible to find a bacteriological test of the pollution of air by material given off by the human body comparable to the B. coli (&c.) test for the pollution of water by material derived from a like host; a test capable of application as an index of the possible access of morbific virus to air, in a manner similar to that in which the B. coli (&c.) test is an index of its possible access to water."

After a careful examination of the salivas of a large number of people of different ages and sex Dr. Gordon found, as might perhaps have been expected from the work of Miller, David, and Goadby upon the micro-organisms of the mouth, that the organism which was most abundantly present in the saliva was the streptococcus brevis (Lingelsheim) which Goadby found "in all mouths, healthy or unhealthy, clean or dirty." This streptococcus is in no sense confined to the mouth of man but it is found also in the mouths of monkeys, dogs, rabbits, or guinea-pigs. Dr. Gordon found this organism to be present in great abundance in the several salivas tested by him. It was generally present to the extent of 10,000,000 per cubic centimetre of saliva and sometimes the figure reached ten times that amount. Other streptococci were found, but Dr. Gordon has selected streptococcus brevis as being that

[1] The first notice appeared in THE LANCET of Dec. 3rd, 1904, p. 1609.

which affords the most useful test for the presence of saliva. Often, therefore, confirming the experiments of others with bacillus prodigiosus and bacillus tuberculosis, he undertook similar experiments in reference to what may be called the normal flora of the human mouth, that is to say, he engaged different persons to speak for certain periods and with varying degrees of vehemence, and by employing tests on the same principles as were employed in dealing with what we will call the extraneous organisms he found that the normal micro-organisms of the mouth were carried by droplets in practically the same manner as Flügge and others have demonstrated to be the case with organisms purposely introduced into the mouth or which were there present by virtue of the diseased condition of the patient. Whatever organism was employed it was found that the maximum distance at which it could be detected was 40 feet in front of, and 12 feet behind, the operator. We have no space to describe in detail the methods employed by Dr. Gordon but it must be mentioned that he found neutral red broth the best medium for cultivation by virtue of the fact that its colour is markedly changed by streptococcus brevis when incubated anaerobically for 48 hours at 37° C., a phenomenon which does not ensue in the case of the other streptococci of human saliva. As a result of this experience Dr. Gordon is inclined to regard the streptococcus brevis test as "almost if not quite as delicate a test for saliva as is B. coli for the presence of fæcal matter."

It would seem, therefore, that we may have in the presence or relative abundance of the streptococcus brevis in rooms occupied, or which have been recently occupied, by man or animals an indication of the adequacy or insufficiency of the ventilation of the room, factory, or cowshed, but the conclusions will naturally be governed very materially by the pursuits of the inhabitants and by the degree of excitement which may prevail at any given moment. For instance, if the streptococcus brevis test was applied to the air of a factory wherein strict silence was enjoined we can imagine that the ventilation might be regarded as excellent and a similar remark might be made with respect to a crowded church wherein, or at a time when, the members of the congregation were taking little active part in the service. Conversely in a factory where there was much loud talking, in a place of worship when a revivalist meeting was being held, or at times in the London Stock Exchange or Paris Bourse the conditions might be regarded by the streptococcus brevis test as calling for action under the Public Health Act. In a public place such as the House of Commons a different standard of *relative abundance* would be necessary, on the one hand, during the dinner hour and, on the other, during an altercation below the gangway. But, as Dr. Gordon observes in summing up his most interesting paper, "the value of the streptococcus test as a means of estimating pollution of air by breath-borne material and as a test for the efficiency of ventilation is a matter for the future to determine." He suggests the possible application of a down draught by way of diverting the streptococci, together with any pathogenic organisms which may be present, from the mouth of the speaker to some exhaust-chamber below the floor. We should much like to see this suggestion acted upon and some experiments undertaken with the view of determining the force necessary to divert the droplets given off during a paroxysm of coughing or during some violent declamatory effort.

It is, of course, difficult to ascertain to what extent the streptococci of normal saliva may have any prejudicial effect in tending to promote the superadded infections which are so frequently associated with certain diseases, but, as Dr. Gordon points out, streptococci as a group are doubtless active in this direction, and the fact that streptococci of normal saliva appear to be for the most part devoid of virulence for the mouse cannot be regarded as conclusive of their harmlessness in all circumstances. It would seem to be clear from the experiments of the Germans conducted some time ago that wherever violent speaking is taking place the hearers in the vicinity are liable to become infected by any infectious disease or condition from which the speaker is suffering, assuming that such infection can be given off by the medium of the saliva, and what Dr. Gordon's work has possibly done is, amongst other things, to hold out a hope that in the future we may be able to ascertain a means of diminishing this obvious risk without undue interference with our comfort. Although a great deal of additional work will be necessary before the carbon-dioxide test can be usefully superseded by the one here under discussion the bacteriological test might in certain cases be employed in conjunction with the chemical.

A FRENCH SANATORIUM FOR CURABLE CONSUMPTIVES.

(FROM A SPECIAL CORRESPONDENT.)

AN account of a visit to the new sanatorium for poor consumptive patients at Bligny, 22 miles south-west of Paris, may be of interest in the present state of the campaign against tubercle. Half an hour in the train to Orsay and one and a quarter hours in a ramshackle country omnibus through quiet domestic scenery bring the traveller to the front gate and without any introduction a medical visitor is warmly welcomed as a *confrère* by the medical director of the institution, Dr. Guinard.

The Bligny Sanatorium, opened in October, 1903, was erected on the initiation of M. Paul Mirabaud, a generous Parisian banker, for the sum of £48,000, and is maintained to a large extent by receipts from patients, assisted by contributions from the charitable society, L'Œuvre des Sanatoriums Populaires de Paris, which erected it. The inmates pay £4 a month, or if their means will afford it £6. Most pay only £4. Their proportionate cost works out at £5 a head a month. The founder was fortunate in his architect, M. Magne, Professeur à l'École des Beaux Arts, whose work is as satisfactory to the artistic sense as to the demands of modern science. Built in massive style and of good proportions in rough, cobble-like concrete blocks, which give the effect of old stone and are said to be equally durable, it has, from the entrance or side, the general air of an old château adapted to its present use. On the reverse aspect, however, there is no question of new wine in old bottles. Two heavy wings 120 feet long flank at an obtuse angle the central two-floored building of similar length, its face entirely occupied by the galleries which, open along their whole length and height, are the essential elements in the treatment. Ascending a few steps or passing up the stairway to one or other of these galleries, the visitor looks down a long vista of full-length wicker chairs, each separated from its neighbour by a little table on the floor and an electric light on the wall, each occupied by the particular one of the 120 inmates who has been assigned to it, as he has been assigned to his bed, bedroom, place at table, his distinguishing number, and his general equipment by the director on admission. The patients look warmly covered, dressed in a variety of ordinary apparel, lying on a thick grey blanket and a couple of cushion-pillows, with another blanket to cover them. At intervals the line is broken by a glass screen to break up the draught; underfoot is the concrete floor with rounded corners; overhead the beams of the roof and out over the light iron railing a splendid view south-south-west—the approved aspect—through the park which slopes away into the valley below to the cosy little village of Briis-sous-Forges to the richly cultivated and wooded undulating country beyond and to the dim blue hills in the far distance. An hour later some of the patients are in occupation of the croquet-court and bowling-ground, others are wandering about the bushes and copses of the 220 acre park, and a few by special leave are walking outside up to a radius of half a mile from the house.

The object of this sanatorium is to cure poor male consumptives. For this purpose none but cases in an early stage are admitted; the patients do the housework themselves; there are no nurses; and the staff for 120 patients consists only of three medical men, a few persons engaged in the offices, grounds, and engine-house, and a body of 13 women belonging to a religious sisterhood who manage the kitchen, linen store, and laundry. Having fewer resources than many of us for enjoying idle hours, the patients object less than most persons probably would to the very rigid arrangement of their day. The printed time table announces that the patient rises at 7 A.M., takes his coffee at 7.30, and his douche at the medical attendant's hands at 8; he then takes his walk till 9.15; lies down till 10.15; and eats again at 10.30; he walks, rests, eats, rests, eats, walks, rests, eats and finally rests, till at 9 he goes to bed, and at 9.30 is in the dark. The discipline is strict. We sat down together to dinner at 1 o'clock and to a collation of bread-and-butter and hot milk at 4 o'clock; and we rose again at a signal from

the medical man presiding at the table with a great clatter of chairs on the concrete floor as if we were at school. The food was excellent both in quality and cooking; our own poor people would call it luxury if they had the French taste—two meat courses, two vegetables, a soup, and a dessert with a flask of red wine. But forced feeding is not attempted; the appetite only is forced and that only by natural means. Serving at meals is done by the healthiest patients in turn, ten or 12 being detailed for the purpose each day. The bedrooms are similarly tended; the beds are made and all clothes and boots are brushed by the patients themselves. Clothes and boots are brushed in separate cloak-rooms where the boots are always exchanged for slippers on entrance after a walk, prevention of dust and waste matter being considered more effective than accumulation and removal. The bedrooms, containing two or three beds in each, are small but unencumbered by furniture of any kind, with windows which are kept open by a patent lock, being shut only for half an hour before bedtime and in the rare event of a storm driving straight into the room. The patients are unable to close them but they can be closed if necessary. Two or three patients were keeping their beds by order and one was allowed to receive a visitor. In such cases it is obvious that windowless windows are a drawback. All washings take place in the lavatory attached to each bedroom, kept with scrupulous care, or in the douche room in the basement. The douche is a wave, not a spray, and begins at a temperature of 30° C., declining to 12°.

On the ground floor of one wing, passing on account of the slope of the hill into the basement of the central block, are the kitchens, linen store, douche, bottle-washing, dispensary, and medical rooms. The bottle-washing room is of especial interest. Every patient has his numbered pigeon-hole and a couple of pocket spittoons, "crachoirs de poche," flat two-ounce bottles of blue glass with a rubber-lined metal cap which screws on to the neck. One of these the patient keeps always in his pocket, so that no spittoons are seen anywhere about the premises and there is no need for infecting handkerchiefs with tuberculous sputum. When the bottle is nearly full the patient takes it to the bottle-washing room which opens directly both to the outside and to the passage, and exchanges it for the clean bottle. The bottles are cleaned by an assistant. The sputum is mixed with dry sawdust and burnt. A specially devised, jacketed metal sink receives the bottles, steam is turned on, and the whole is kept boiling, caps, rubber lining and all, for thirty minutes. They are then stood on a wooden stack to dry and when dry are returned to the pigeon-holes. All rags, papers, and soiled materials are thrown into covered metal bins also to be burnt. The medical rooms are of considerable interest. The most important medical instrument of all—the scales—takes a prominent place; and by its side are various strange versions of Laennec's original stethoscope. There are a complete skiagraphic installation with a good developing room which is little used, although there are already a few good skiagrams of caseous lungs to be seen; a high-frequency equipment; apparatus for testing the lung capacity, shape of the chest, and variations of the pulse; and all requisites for bacteriological work, section cutting, and examination of the blood. Some of this outfit, all of the first quality and carefully selected, may at first appear superfluous. But the three medical officers—Dr. Guinard, Dr. Bertelon, and Dr. Dieuzaide—are experts and enter into the details of their special subject with all the single-minded enthusiasm which distinguishes Frenchmen and Germans from ourselves who, as a rule, prefer general knowledge to special. Far from time hanging heavy on their hands it was evident that they take little leisure from their work and seldom go into Paris. All three of them study every single case and study with them is no light task. Besides the usual methods of examination the most detailed microscopic and bacteriological investigation of sputum, blood, and urine is carried out. This is repeated for each patient once in every three weeks and six or seven complete "analytic essays" have therefore to be made out every day. The mass of detail thus collected is made easily available by being entered on a comprehensive sheet of printed questions in which all useful information is properly classified and arranged. Thus the space headed "Personal Antecedents" includes the following sub-headings: growth, habitual health, military service, style of life (*genre d'existence*), antihygienic work, privations, overwork, excess, alcoholism, tobacco, promiscuity, and particular circumstances, besides the more usual details. In examination of the sputum other bacteria besides the bacillus tuberculosis, elastic fibres, and cellular elements are expressly described; in that of the urine cryoscopy and the diazo reaction; and in that of the blood the agglutinating power.

As to therapeutics, little is done beyond giving the most minute attention to general health. Drugs are given only for symptomatic treatment. Local lesions are treated in the usual way. A surgical table and instruments in a glass case have not yet been used but admirable electric laryngeal and nasal lamps and canteries are in common use, worked from a switchboard at the physician's hand. Dry-cupping is in favour. One man on the day of my visit was sitting in a chair with 20 glass cups of the usual size on his back.

There are two outhouses. In one is the laundry, devised with proper attention to the special requirements of infected clothes, equipped with the most efficient washing churns and centrifugal driers, propelled by water-power, and with a Geneste-Herscher disinfecting apparatus running through a wall between two adjacent rooms. In the other is a double gas-engine which works the electric light and pumps up the water. Drinking water is filtered in Pasteur-Chamberland apparatus. The sewage is disposed of by being water-carried into hermetically sealed iron chambers in the basement, from which it is removed in carts, mixed with disinfectant, and, I think, buried at a distance. There is room here for improvements which are being undertaken. The park includes a kitchen-garden in which a few of the stronger patients are occasionally encouraged to do some light work. There is at present no satisfactory means of transport between the sanatorium and the nearest railway station.

In all, this establishment at Bligny would seem to leave little, if anything, to be desired and its scope of usefulness is soon to be doubled by the erection in the grounds of a similar sanatorium for 120 women. But it is difficult to keep many patients in the institution for much over the three months to which they are held hostage by the amount of their washing bill and even in the first year's working there have already been several relapses after discharge and not a few intractable cases even in the very favourable group selected for the treatment. It is more useful as a school for consumptives than as a hospital. Would it not be still more useful, as Dr. Newsholme and others have long insisted, if looked on only as a school, giving at the same time a good opportunity for accurate diagnosis, dismissing all idea of hospital functions, and limiting the term of education to a fortnight?

MEDICINE AND THE LAW.

The Law Relating to Medical Practitioners in America.

SEEING that the laws now in force in the United States are to a large extent founded upon English jurisprudence it is not unprofitable to consider the reports of cases heard in the American courts. The decisions of American judges are not, of course, in any sense binding upon an English court of law, but in so far as the judgment of an American court is based upon principle it is at least entitled to respect if cited to an English judge. It should be remembered, however, that in some states of the Union Acts have been passed which have no parallel in this country—as, for instance, the Act which is in force in some States (e.g., New York) which prevents a medical man disclosing the secrets of the consulting room even in the witness-box. In the recently published "General Digest of American Cases" there are some decisions of interest to medical practitioners in England. It is proposed to give an account of some of these decisions in the somewhat peculiar language which appears to be used by the American law reporters. Actions for malpractice appear to be of frequent occurrence in America, if it is fair to judge from their constant appearance in the law reports. The question constantly arises as to what degree of negligence will render the practitioner liable to an action for damages. A physician who is merely a general practitioner cannot be held liable in damages to a patient for diagnosing and treating a disease of the eye as conjunctivitis when it was in fact glaucoma, when the evidence showed that glaucoma is a very rare disease, that it is incurable in character, that its certain diagnosis could be made only by a skilled expert of special training and experience and that it should be treated with remedies and appliances which are never expected to be within reach of the general practitioner of

medicine, that its prominent symptoms were so nearly identical with those of conjunctivitis that the diagnosis made by the defendant was one reasonably to be expected from a general practitioner, and that the treatment given was not found faulty by any general practitioner or expert who testified in the case (Wohlert *v.* Seibert, 23 Pa. Super. Ct. 213). If a charge of negligence is preferred it is clear that the plaintiff must be in a position to substantiate the charge. Thus the burden of proof on the plaintiff is to show that the defendant did not exercise reasonable care, skill, and diligence. In the case of De Long *v.* Delaney, which was heard in Pennsylvania, an action was brought against a physician for failing to use a tourniquet after an accident. There was no evidence from any witness competent to express an opinion that a tourniquet should have been used or that the tight bandage which had, in fact, been used by the defendant was not fully as good. It was held that in the circumstances the judge was right to withdraw the case from the jury. In the case of English *v.* Free (55 A. 777) it was decided that in an action for malpractice against a surgeon evidence that he made an error in diagnosis is insufficient. Some interesting American cases are also recorded in which questions have arisen with regard to fees. Where no fee has been arranged beforehand it is for the jury to say what remuneration shall be paid to the physician for his services and it is often a matter of difficulty to state the criterion according to which the jury must decide the question. In the case of McKnight *v.* Detroit (97 N.W. 772) an action was brought by a physician of high standing for "compensation"—i.e., for fees. The judge told the jury that they should consider the skill and experience of the physician and the character of the services and limit the plaintiff's claim to such sum as would compensate the plaintiff for those services. He would not say that if the defendant was liable at all it was only in a fair and reasonable amount. He also refused to tell the jury that the plaintiff had no right to fix an arbitrary fee and that no number of physicians could agree on a fee to be charged and that it did not make any difference how many patients the plaintiff attended. These matters were to be taken into consideration. It was held in a superior court that this charge was correct. Disputes sometimes arise as to how much is agreed upon to be paid for an operation. In the case of Abram Bros. *v.* Krakower (84 N.Y.S. 529) the plaintiff testified that it was agreed that he should perform an operation for the defendant. Another surgeon was to be present and to receive $500, while the plaintiff was to receive $250. The other surgeon was called as a witness and proved that he attended and received a cheque for $500. The patient (who defended the suit) alleged that the contract was that the plaintiff was the only person to be paid and that he was to receive $750 if a certain operation proved necessary and only $250 if merely the operation actually performed proved necessary. He also alleged that the cheque for $500 had been made payable to the other surgeon at the plaintiff's request, his reason being that he would have the other surgeon at the operation. Upon these facts the court gave judgment for the plaintiff, holding that the defendant's story was improbable. It sometimes happens that a husband resists a claim for services rendered to his wife. In McCoy *v.* Fletcher (85 N.Y.S. 1022) a surgeon brought an action against a husband to recover fees for an operation performed on the wife. It was proved that the operation was performed with the husband's knowledge. The jury, nevertheless, found for the husband. On appeal, judgment was entered for the plaintiff on the ground that the verdict was against the weight of evidence. It is now a matter of common knowledge that in many States of the Union Acts have been passed which prohibit a physician from disclosing professional information acquired from a patient. Divers questions have arisen as to the effect of this rule. In one case (Crago *v.* City of Cedar Rapids, 98 N.W. 354) it was decided that the expert testimony of a physician, based upon hypothetical questions, as to the cause of an injury to a person whom he had attended as a patient cannot be rejected under Section 4608 of the Code of Iowa, which provides that no physician shall be allowed in giving testimony to disclose any confidential communication properly made to him in his professional capacity. Again, the testimony of a physician limited to the identification of the plaintiff, to the fact that he had treated her, together with the place and length of time of such treatment, did not disclose, or have any tendency to disclose, any communication which she made to the physician. He was therefore not prohibited from giving such evidence (Deutschmann *v.* Third Ave. Ry. Co., 84 N.Y.S. 887). Nevertheless, in an action on a policy issued by a benefit society which was defended on the ground of false statements in the application, the testimony of a physician as to the physical condition of the deceased when he was treated by the witness was excluded; but the exclusion only extended to the time of treatment (Dubcich *v.* G. L., 74 P. 832).

The Duties of the Police.

At a recent inquest at Hackney it was shown that the deceased, a plasterer, after a drinking bout had suffered from delirium tremens and in this condition had attacked his wife and children first with a saw and afterwards with a chopper. After a violent and prolonged struggle he had appeared to fall asleep and was left by his terrified family on the bed where he was afterwards found to be dead. The medical evidence was to the effect that death was due to heart failure following upon an attack of delirium tremens and upon the struggle which had taken place. Fortunately, no other death than that of the man himself was the result of the incident, a fact which was in no way due to any assistance received by his unfortunate wife and offspring from the police. They had sent a neighbour for assistance and two constables had actually arrived but had refused to enter the house. As many are aware the police, while not backward in maintaining law and order in the streets, are extremely diffident in asserting themselves when their aid is required within doors. An inquiry was asked for by the coroner's jury as to the conduct of the policemen in the case referred to above and it is to be hoped that the Chief Commissioner has had his attention called to the matter. Every Englishman likes to regard his house as his castle but he does not push this to the point of preferring to be murdered or wounded in it to enduring the intrusion of the civil authority. He regards the police as existing for the prevention, as well as for the punishment, of crime, and will be likely to excuse what may technically be an act of trespass if it is honestly undertaken in the belief that a dangerous act is being committed and can be stopped.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Jan. 13, 1827.

Medical Police, and Secret Remedies.

M. DOUBLE read before the Royal Academy of Medicine of Paris, the first part of a work which he had undertaken in order to prove,—1st. That for several centuries, by the vigilance of the administration, in concert with the most distinguished medical men, the strongest efforts have been made to rid society of the pestilence constantly springing from secret remedies. 2. That the most favourable circumstances are at present combined to free them from the tribute of money and life, which, on no consideration, ought longer to be tolerated.*

In France, the first decree relative to this object was issued by Philip IV., called the *Bel*, in 1311; it prohibited the exercise of the healing art to all those who had not been recognised by sworn masters (maitres jurés) capable of practising the art. Louis XIV., especially by his declaration of 1696 and 1702, and the decree of 1767, manifested a sincere wish to repress the abuses which had introduced themselves into the exercise of medicine. He prohibited to every person, not provided with a valid title, the practice of medicine as well as the sale or gratuitous distribution of medicaments, and included in this prohibition the religious orders. Louis XV. formed, in 1772, a special commission for the purpose of examining and deciding on secret remedies, inspecting the mineral waters, and pronouncing on epidemics. The unfortunate Louis XVI. erected for the same purpose the Royal Society of Medicine. Louis XVIII. gave the same powers.

The decree of the 10th of August, 1810 may be considered as the resumé of preceding legislation on the subject, and it positively establishes, that *secret remedies ought no longer, and could no longer, be tolerated.*

* M. Double's observations cannot apply to England, for quack medicines and quacks abound, and will continue to abound, as long as our government encourages the sale of the one and the constituted medical authorities possess no power to prevent the existence of the other.—ED. L.

THE LANCET RELIEF FUND.

THIS Fund, which came into operation on the 1st of February, 1889, has for its Almoners the President of the Royal College of Physicians of London (Sir WILLIAM SELBY CHURCH, Bart., K.C.B., M.D. Oxon.), the President of the Royal College of Surgeons of England (Mr. JOHN TWEEDY), the President of the General Medical Council (Dr. DONALD MACALISTER, M.A., B.Sc., F.R.C.P.Lond.), Mr. THOMAS WAKLEY, F.R.C.S.Eng., and Mr. THOMAS WAKLEY, jun., L.R.C.P. Lond., with Sir HENRY PITMAN, M.D. Cantab., F.R.C.P. Lond., as Honorary Auditor.

Almoners.

FOR the guidance of those seeking assistance and of those desirous of recommending deserving cases, it may be useful to record that THE LANCET Relief Fund is sustained solely by the Proprietors of THE LANCET, who provide every January the sum of at least £300, which is administered free of cost, with the object of affording immediate pecuniary assistance to registered medical practitioners, or to their widows and orphans, in cases of distress and emergency, by the grant of money by way of loans free of interest, or gifts, as the circumstances of the various cases may require. In the case of widows and orphans, in order to come within the scope of the Fund, the death of the Husband or Father must have been of recent occurrence.

Scope of the Fund.

WHEN the Fund was inaugurated considerable misapprehension existed as to the precise objects for which it had been established, and, as a result, the majority of the earlier applications, being cases of *chronic* distress, and not coming, therefore, under the designation of *emergency*, could not be entertained. As the Almoners still receive applications for assistance for cases which are obviously of a *chronic* character, it is thought advisable to append a statement concerning cases of this nature which appeared in THE LANCET of Feb. 16th, 1889:—

Chronic Cases ineligible.

"We are requested by the Almoners to state that, from the character of a number of the applications received, both personally and by letter, for relief, it is evident that in many cases the object for which this Fund has been established is not quite clearly understood; and if relief had been afforded in the cases of those who suffer from chronic distress the Fund would have been completely exhausted within the first few days of its existence. They would therefore be greatly obliged if those readers of THE LANCET who may be asked to endorse applications would carefully peruse the Application Form and explain the precise object of the Fund to those applicants whose cases do not seem to come within the scope of the purpose for which the Fund has been established, which is to afford prompt aid to registered medical practitioners, or to the widows or orphans of members of the profession, who, in consequence of the supervention of some unexpected emergency, which is not likely to recur, have pressing need of immediate and temporary pecuniary relief"—

And who, it may be again pointed out, are likely to be permanently benefited thereby.

SIXTEENTH ANNUAL REPORT of the ALMONERS.

For the year ending December 31, 1904.

IN presenting their Sixteenth Annual Report the Almoners have to record that the balance in hand on Dec. 31st, 1903, was £160 2*s.* 3*d.*, to which, on Jan. 1st, 1904, the Proprietors of THE LANCET added the sum of £300, making a total sum of £460 2*s.* 3*d.* available for grants during the year 1904.

The number of applications for assistance received by the Almoners during the year was 55—a decrease as compared with those received in the previous year—of which 15 were so obviously outside the scope of the Fund that they were rejected by the Secretary by virtue of the discretionary power conferred upon him by the Almoners at their meeting on Jan. 1st, 1890; seven were rejected by the Almoners after due consideration; four were withdrawn by the applicants; in seven cases Forms of Application were sent but were not returned—probably the applicants recognised that their cases were outside the scope of the Fund; and 22 applicants were relieved by gifts or loans of money ranging from £5 to £25. The relief of the 22 cases, a detailed list of which is given in the accompanying Statement of Accounts, involved the expenditure of the sum of £266—a sum just within the normal income of the year, omitting balances brought forward and possible receipts from repayment of loans.

Letters continue to be received by the Almoners from some of those whom they have helped, expressing their gratitude for the relief which has enabled them to mitigate, and in not a few cases to overcome, their difficulties, and thus testifying to a pleasing feature in the administration of the Fund.

The promptness of the relief afforded to applicants is also a feature to which the Almoners continue to give their particular attention; in this connexion it may not be

uninteresting to record the fact that on several occasions the Almoners have again been able to consider cases and to grant relief on the actual day on which the application was received. In one case of urgent distress (No. 629) the circumstances were considered by the Almoners and aid was rendered within four hours of the application being made.

There continue to be far too many applications received for assistance for what are obviously "chronic" cases, a large proportion of the cases rejected by the Almoners and the 15 cases rejected by the Secretary coming under this heading. It cannot be too emphatically reiterated that THE LANCET Relief Fund exists to meet cases of *sudden emergency*, where timely help will tide the practitioner over unforeseen difficulties, or to afford a widow and orphans a few weeks' respite from the more pressing financial cares of their unhappy position.

The Almoners, in their Report for the year 1901, had occasion to deplore the neglect on the part of applicants who had received loans from the Fund to fulfil their obligations and to repay the amounts of their loans. They have pleasure, therefore, in recording that the sum of £31 was repaid during the year under review.

Dr. Donald MacAlister, M.D., F.R.C.P.Lond., M.A., B.Sc., having succeeded Sir William Turner, K.C.B., M.B.Lond., F.R.C.S.Eng. & Edin., F.R.S., as President of the General Medical Council at the conclusion of the last autumn session, thereupon became an Almoner of the Fund and kindly consented to act as such. Sir William Turner's signature is appended to this Report, he having acted as an Almoner for practically the whole of the period covered by it. The present Almoners desire to record their appreciation of his services to the Fund during six years and of the excellent advice which he was ever ready to give.

In conclusion, the Almoners desire to state that they will at all times be glad to have their attention called to any cases of genuine distress coming within the scope of the Fund but they trust that those recommending cases or giving testimonials will first take steps to satisfy themselves of the *bona fides* of such cases before endorsing them. In the administration of such a Fund as this the Almoners are of necessity largely guided in their decisions by the testimonials accompanying the applications.

(Signed) W. S. CHURCH. JOHN TWEEDY.
WM. TURNER. DONALD MACALISTER.
THOMAS WAKLEY. THOMAS WAKLEY, Jun.

January, 1905.

THE LANCET RELIEF FUND.

STATEMENT OF ACCOUNTS FOR THE YEAR ENDING DEC. 31st, 1904.

DR.	£	s.	d.
To Balance at the London and Westminster Bank, Limited (Westminster Branch), Jan. 1st, 1904	160	2	3
,, Proprietors of THE LANCET, Jan. 1st, 1904 ...	300	0	0
,, Repayment of Loans :—			
Case No. 599	5	0	0
,, 591	1	0	0
,, 617	25	0	0
	31	0	0
	£491	2	3

CR.	£	s.	d.	£	s.	d.
By Loans :—						
Case No. 617				25	0	0
By Gifts :—						
Case No. 604	10	0	0			
,, 605	5	0	0			
,, 606	5	0	0			
,, 607	5	0	0			
,, 608	25	0	0			
,, 610	5	0	0			
,, 611	20	0	0			
,, 612	10	0	0			
,, 613	20	0	0			
,, 614	10	0	0			
,, 616	10	0	0			
,, 618	10	0	0			
,, 619	10	0	0			
,, 620	25	0	0			
,, 622	5	0	0			
,, 623	10	0	0			
,, 624	5	0	0			
,, 625	10	0	0			
,, 626	6	0	0			
,, 628	20	0	0			
,, 629	15	0	0			
				241	0	0
Balance at Bank, Dec. 31, 1904 ...				225	2	3
				£491	2	3

I find by the Bankers' Book that the actual Balance on Jan. 1st, 1904, to the credit of the Fund was £160 2*s.* 3*d.*, to which the sum of £300 was added by the Proprietors of THE LANCET on Jan. 1st, 1904.

The balance at the Bank on Dec. 31st, 1904, was the sum of £225 2*s.* 3*d.* I have also checked the receipts for disbursements and find the above account strictly accurate.

January 3rd, 1905. HENRY A. PITMAN, Hon. Auditor.

ASYLUM REPORTS.

London County Asylum, Bexley Heath (Report for the year ending March 31st, 1904).—The average number of patients resident during the year was 2085, comprising 1012 males and 1073 females. The admissions during the year amounted to 585—viz., 282 males and 303 females. Of these, 528 were first admissions. Dr. T. E. K. Stansfield, the medical superintendent, states in his report that "the hopeless character as to the possibility of recovery of the bulk of the admissions during the year is clearly demonstrated. ..... The axiom the sooner the disease can be brought under treatment the greater hope there is of recovery applies more to mental alienation perhaps than to any other form of disease." Only 30 per cent. of cases came under treatment within three months of the beginning of the attack, owing to which, adds Dr. Stansfield, "not only is the possibility of recovery greatly diminished but when recovery does take place the permanent injury present in every case is proportionately greater. The importance of *habit* in relation to mental diseases is but little appreciated and yet to my mind it is one of the most powerful factors in the development of chronic insanity and it remains after the first causes have passed away, as is well illustrated by the bulk of cases in every asylum. All this points to the urgent necessity of patients being bought under proper observation and treatment at the earliest period of their alienation before insane habits of thought and action become fixed." Melancholia was present in 23 per cent., paranoia and delusional insanity in 14 per cent., primary dementia in 13·5 per cent., and general paralysis in 6 per cent. of the admissions. Among the causes of insanity were arterio-sclerosis, senile decay, alcoholic intemperance, insane parentage, and syphilis, in descending order of frequency. "The important part played by heredity in the causation of mental disease was demonstrated by the fact that insane heredity was made out in 132 cases or 22·5 per cent." The number of cases discharged as recovered during the year amounted to 162—viz., 56 males and 106 females, or 7·7 per cent. of the average number resident. The deaths during the year amounted to 167, or 8 per cent. as calculated on the same basis. Of the deaths seven were due to renal disease, nine to colitis, 13 to cerebral softening, 18 to cardiac disease, 19 to pulmonary and other forms of tuberculosis, 46 to general paralysis of the insane, and the rest to other causes. The Commissioners in Lunacy state in their report that the general scheme and management of the asylum deserved favourable commendation, that the patients appeared to be well dressed and well cared for, that the day-rooms and dormitories were bright throughout, and that the medical case books were kept in a highly satisfactory manner. They recommend that in case of fire the high level water-tank should be used. The committee of management states in its report that plans have been prepared and adopted for the erection of a hospital villa to accommodate 50 male patients and the necessary staff. The internal decoration of the asylum is now complete.

London County Asylum, Horton (Report for the year ending March 31st, 1904).—The average number of patients resident during the year was 1940, comprising 880 males and 1060 females. The admissions during the year amounted to 842—viz., 329 males and 513 females. Of these 824 were first admissions. Dr. F. Bryan, the medical superintendent, states in his report that an unusual number of the admissions have been patients of extremely troublesome character. The number of patients discharged as recovered during the year amounted to 218—viz., 76 males and 142 females, or 11·2 per cent. of the average number resident. The deaths during the year amounted to 245, or 12 per cent. as calculated on the same basis. Of the deaths six were due to colitis, 14 to renal disease, 15 to senile decay, 22 each to pneumonia and organic brain disease, 29 to pulmonary and other forms of tuberculosis, 45 to cardiac disease, 47 to general paralysis of the insane, and the rest to other causes. There were three inquests held during the year. The first was on a female patient who strangled herself by means of a small piece of cord torn from her nightgown and resulted in a verdict of "suicide during a state of unsound mind." The second was on a male patient who was alleged by his wife to have sustained ill-treatment at the asylum. The verdict was "death from natural causes, to wit, syncope produced from congestion of the lungs." The third was a male patient, a general paralytic who accidentally injured himself by fracturing his ribs and sternum and died the next day from bronchitis and emphysema. A verdict in accordance with the evidence was returned. The general health of the inmates has been good throughout the year and there were comparatively few cases of influenza. Painting and decorating of the asylum have been going on throughout the year. The committee of management states in its report that various portions of the building now in course of completion at the asylum include sanitary annexes to the airing courts, greenhouse, cricket pavilion, and half-padded rooms at the respective costs of £807 15s., £990, £140, and £647. The painting and papering of the buildings have been in progress since April, 1903, and have cost £3005. The roads on the estate and the airing court paths are being put into thorough repair at a cost of £900. Precautions against fire and facilities for escape from an outbreak have received continued attention. The outer doors of the wards and dormitories have been altered to open outwards, the estimated cost of the work being £480, and the fire emergency exit doors have been constructed at a cost of £52. A second fireman has been appointed and the supply from the water mains has been increased at a cost of £75. The asylum has not been visited by the Commissioners in Lunacy in the year under review.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On Sanitary Administration in the Itchen Urban District and upon the Prevalence of Enteric Fever therein, by Dr. H. TIMBRELL BULSTRODE.[1]—The urban district of Itchen is an area about two miles broad by two and a half miles long, situated on the east side of the estuary of the river Itchen. Southampton Water forms its southern boundary. In 1901 this district contained 2683 inhabited houses. Building is increasing, some 700 new dwellings having been put up since 1896, when the urban district was formed. The population consists mainly of artisans and others employed in Southampton who go daily to and from their work across the steam ferries. At Woolston and in a few other localities are "residential" houses of the larger kind. Enteric fever has lately shown a notable prevalence in this district. The figures for notified cases of this disease in each year from 1899 to 1903 are respectively 17, 12, 63, 52, and 65. The last three numbers appear extremely high for a population of about 13,000 persons. It is possible that some of the recent increase has been more apparent than real, for the reason that a larger proportion of mild cases of enteric fever, especially in children, have been notified than was formerly the case. This is suggested by the very low case mortality, the recorded deaths from enteric fever during the five years in question being three, one, two, two, and two only. But however this may be, it is obvious that the prevalence of the disease has become a serious question for the district. Dr. Bulstrode considers in his report the possible operation of various causes of spread of enteric fever. There seems no reason to suspect the water-supply, which in most instances is derived from the mains of the South Hants Waterworks Company. Inquiries with regard to milk, shell-fish, and other food consumed by the persons attacked had not been made with much regularity by the local officers concerned, but the data as far as they go do not tend to implicate particular food supplies. As regards sewerage it is remarkable that the increase of enteric fever has coincided with the provision of a system of sewers in the district in replacement of the cesspools which were previously in use and which had proved very objectionable. The house drains provided in connexion with the new sewers are in most cases satisfactory according to modern standards, but the sewers themselves leave a good deal to be desired. They must be leaky in places, as they admit a quantity of soil water, and although designed as part of a "separate system" they receive large volumes of rain water and occasionally have

[1] London, Eyre and Spottiswoode; Edinburgh, Oliver and Boyd; Dublin, E. Ponsonby. Price 6d.

overflowed in times of storm. Purification of sewage at the outfall is also liable to be unsatisfactory, partly because of the excessive volume of the sewage and partly because of the manner in which septic tanks and filtration are employed at the new outfall works. It is possible that the extensive disturbance of already polluted soil in the neighbourhood of dwellings, which took place when the new sewers were laid, has had something to do with the increase of enteric fever. The occurrence of several instances in which the disease has appeared in the same dwelling at intervals of several months or years also seems to support the suggestion of specific pollution of soil. Dr. Bulstrode indicates, however, certain other questions which should not be lost sight of. One is that in many cases direct infection was traced from person to person. The district has no isolation hospital and no disinfecting apparatus; moreover, dwellings in which cases of enteric fever occurred were not in all cases disinfected after the recovery of the patient. The report insists strongly on the need for hospital provision. Attention is also drawn to the necessity for overhauling the new sewers in order to stop leakage, to the need for proper enforcement of local by-laws, and to other administrative matters.

On the Sanitary Circumstances and Administration of the Eight Sanitary Districts comprised within the Penzance Registration District, by Dr. J. SPENCER LOW.[2]—This report gives a useful and practical account of a survey of the sanitary conditions of two boroughs (Penzance and St. Ives), five urban districts (Madron, Paul, St. Just, Ludgvan, and Hayle), and West Penwith rural district. The population of the whole is nearly 50,000; the area under consideration, the most westerly portion of England, comprises agricultural land, market gardens, mines (now mostly disused workings), wild moorland, fishing villages, and small towns and scattered hamlets. The districts are dealt with separately and the sanitary condition and administration of each are reviewed. Among the principal recommendations which Dr. Low makes as a result of his survey are the following. In Penzance there is need for constant supervision of the stream which brings drinking water from Langen to the town in order to prevent pollution from adjoining farmhouses and land. In view of the recent prevalence and the heavy case mortality of diphtheria steps should be taken to secure bacteriological aids to diagnosis in this and other infectious diseases. At St. Ives measures are required to prevent the pollution of the Stennack stream, while similar pollution of the Tolcarne stream should be dealt with in the Madron district. The urban district of Paul, which includes the well-known villages of Newlyn and Mou-ehole, is reported to contain a number of objectionable and insanitary conditions. It requires an improved water-supply, proper scavenging, flushing to the water-closets, and in general needs some approach to efficient sanitary administration which is now wanting. The small mining town of St. Just also should be provided with a pure and sufficient supply of water in replacement of the existing public wells which are liable to pollution. The urban district of Hayle has in general a better sanitary record than the other districts concerned. It is satisfactory to find that many of the improvements of this district followed an inspection made by Dr. F. St. George Mivart in 1897 and it may be hoped that Dr. Low's report will have a similar good result in the case of the whole area with which he deals. Six of the districts in question are without hospital accommodation for cases of infectious disease and for each of these districts Dr. Low gives figures showing the extent to which scarlet fever, diphtheria, and enteric fever have been prevalent in recent years.

On the Sanitary State and Administration of the Newtown and Llanidloes Rural District, by Dr. R. A. FARRAR.—This is another administrative report relating to a large area situated in the valleys of the Severn and Tarannon and including the head waters of the Wye. The population of Newtown and Llanidloes district is about 12,000. As a result of detailed inspection Dr. Farrar recommends the appointment of an efficient inspector of nuisances and also of a district surveyor. At present there are two medical officers of health, each in general practice and responsible for a wide area. The salary which the district can afford would be insufficient to maintain a single medical officer who was not also in general practice. Dr. Farrar reports, however, that notwithstanding the large area of the whole rural district there would be an advantage in a single medical practitioner being appointed as its medical officer of health.

[2] Ibid., price 1s.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 9181 births and 5955 deaths were registered during the week ending Jan. 7th. The annual rate of mortality in these towns, which had been 19·2, 19·4, and 22·4 per 1000 in the three preceding weeks, declined again last week to 19·9 per 1000. In London the death-rate was 18·5 per 1000, while it averaged 20·5 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 10·0 in Leyton, 10·5 in Hornsey, 10·8 in Smethwick, 12·6 in Walthamstow, 12·7 in King's Norton, 12·8 in Leicester, 13·0 in Northampton, and 13·4 in Bournemouth; the highest rates were 25·0 in Hanley, 25·8 in Huddersfield, 26·9 in Great Yarmouth, 27·8 in Coventry, 28·7 in Sunderland, 28·8 in Nottingham, 30·0 in West Bromwich, 31·4 in Grimsby, 31·8 in Stockton-on-Tees, and 37·4 in Merthyr Tydfil. The 5955 deaths in these towns last week included 399 which were referred to the principal infectious diseases, against 421, 399, and 475 in the three preceding weeks; of these 399 deaths, 123 resulted from measles, 97 from whooping-cough, 70 from diphtheria, 40 from scarlet fever, 39 from diarrhœa, 27 from "fever" (principally enteric), and three from small-pox. No death from any of these diseases was registered last week in Croydon, Brighton, Reading, Great Yarmouth, West Bromwich, Smethwick, Aston Manor, Coventry, or Rotherham; the highest death-rates from the principal infectious diseases were recorded in St. Helens, Grimsby, Nottingham, Stockport, Preston, Stockton-on-Tees, and Merthyr Tydfil. The greatest proportional mortality from measles occurred in East Ham, Plymouth, Burton-on-Trent, Grimsby, Nottingham, Middlesbrough, Stockton-on-Tees, and Merthyr Tydfil; from scarlet fever in Southampton and Northampton; from diphtheria in East Ham, Rochdale, Bradford, and Stockton-on-Tees; from whooping-cough in Norwich, Grimsby, Nottingham, Preston, South Shields, and Tynemouth; and from diarrhœa in Handsworth (Staffs.), Derby, and Merthyr Tydfil. The mortality from "fever" showed no marked excess in any of the large towns. Of the three fatal cases of small-pox registered in these towns last week one belonged to Oldham, one to Burnley, and one to Bradford. The Metropolitan Asylums hospitals contained 18 small-pox patients at the end of last week, against 6, 14, and 17 at the end of the three preceding weeks; one new case was admitted during the week, against two, nine, and five in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2403, 2393, and 2386 on the three preceding Saturdays, had further declined to 2308 on Saturday, the 7th inst.; 187 new cases were admitted during the week, against 242, 242, and 201 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 387, 416, and 521 in the three preceding weeks, declined again last week to 443, but were eight above the number in the corresponding period of last year. The causes of 97, or 1·6 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Bristol, Leicester, Hull, Newcastle-on-Tyne, and in 35 other smaller towns; the highest proportions of uncertified deaths were registered in Reading, Birmingham, Grimsby, Liverpool, St. Helens, Manchester, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 22·6, 21·2, and 21·6 per 1000 in the three preceding weeks, declined again to 20·6 per 1000 during the week ending Jan. 7th, but was 0·7 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 15·4 in Leith and 16·3 in Greenock, to 21·3 in Perth and 22·8 in Glasgow. The 690 deaths in these towns last week included 37 which were referred to whooping-cough, 14 to measles, 13 to diarrhœa, eight to "fever"

(including one case of typhus), four to diphtheria, and three to scarlet fever. In all, 79 deaths resulted from these principal infectious diseases last week, against 80, 90, and 78 in the three preceding weeks. These 79 deaths were equal to an annual rate of 2·4 per 1000, which was 1·1 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 32, 31, and 40 in the three preceding weeks, declined again last week to 37, of which 26 occurred in Glasgow, two in Edinburgh, two in Aberdeen, two in Paisley, and two in Greenock. The deaths from measles, which had been 17, 19, and 20 in the three preceding weeks, decreased to 14 last week, and included seven in Aberdeen, three in Glasgow, two in Edinburgh, and two in Leith. The fatal cases of diarrhœa, which had been 16, 25, and 12 in the three preceding weeks, rose again last week to 13, of which six were registered in Glasgow, four in Edinburgh, and two in Dundee. The deaths from "fever," which had been six, eight, and two in the three preceding weeks, increased again to eight last week, and included four in Glasgow and one of typhus in Aberdeen. The fatal cases of diphtheria, which had been seven, five, and two in the three preceding weeks, rose again last week to four, of which three occurred in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 206, 174, and 184 in the three preceding weeks, declined last week to 182, and were 31 below the number in the corresponding period of last year. The causes of 35, or more than 5 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 25·3, 24·5, and 25·0 per 1000 in the three preceding weeks, further rose 25·6 per 1000 during the week ending Jan. 7th. During the past four weeks the death-rate has averaged 25·1 per 1000, the rates during the same period being 19·0 in London and 18·2 in Edinburgh. The 186 deaths of persons belonging to Dublin registered during the week under notice were four in excess of the number in the preceding week, and included five which were referred to the principal infectious diseases, against 10, 12, and 26 in the three preceding weeks; of these, three resulted from measles, one from "fever," and one from diarrhœa, but not any from small-pox, scarlet fever, diphtheria, or whooping-cough. These five deaths were equal to an annual rate of 0·7 per 1000, the death-rates last week from the principal infectious diseases being 1·0 in London and 1·9 in Edinburgh. The fatal cases of measles, which had been six, ten, and 16 in the three preceding weeks, declined again last week to three. The 186 deaths in Dublin last week included 34 of children under one year of age and 45 of persons aged 60 years and upwards; the deaths both of infants and of elderly persons showed a slight decline from the respective numbers recorded in the preceding week. Nine inquest cases and seven deaths from violence were registered; and 65, or more than a third, of the deaths occurred in public institutions. The causes of ten, or more than 5 per cent., of the deaths registered in Dublin last week were not certified.

VITAL STATISTICS OF LONDON DURING DECEMBER, 1904.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious disease it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·1 per 1000 of the population, estimated at 4,648,950 persons in the middle of 1904. In the three preceding months the rates had been 8·0, 9·0, and 7·2 per 1000 respectively. The rates were considerably below the average in Paddington, Kensington, the City of Westminster, St. Marylebone, Finsbury, and the City of London, while they showed the largest excess in Hammersmith, Hackney, Bethnal Green, Poplar, Wandsworth, and Woolwich. The notified cases of small-pox, which had been one and six in the two preceding months, further rose last month to 16, of which seven belonged to Deptford, six to Woolwich, and one each to St. Pancras, Bethnal Green, and Wandsworth. The Metropolitan Asylums hospitals contained 17 small-pox patients at the end of last month, against three, one, and three at the end of the three preceding months. Scarlet fever was slightly less prevalent during December as compared with the preceding month; among the various metropolitan boroughs this disease showed the highest proportional prevalence in Hammersmith, Bethnal Green, Battersea, Wandsworth, Camberwell, and Deptford. The number of scarlet fever patients under treatment in the Metropolitan Asylums hospitals at the end of the month was 2349, against 2127, 2662, and 2566 at the end of the three preceding months; the weekly admissions averaged 233, against 311, 359, and 249 in the three preceding months. The prevalence of diphtheria showed a considerable decline last month; this disease was proportionally most prevalent in Hackney, the City of London, Bethnal Green, Stepney, Poplar, Southwark, and Woolwich. The Metropolitan Asylums hospitals contained 800 diphtheria patients at the end of last month, against 871, 940, and 893 at the end of the three preceding months; the weekly admissions averaged 99, against 131, 139, and 123 in the three preceding months. The prevalence of enteric fever showed a slight diminution during December last; among the various metropolitan boroughs the greatest proportional prevalence of this disease occurred in St. Pancras, Hackney, Holborn, Finsbury, Bethnal Green, and Greenwich. The number of enteric fever patients in the Metropolitan Asylums hospitals, which had been 237, 225, and 178 at the end of the three preceding months, had further fallen to 159 at the end of last month; the weekly admissions averaged 22, against 45, 25, and 25 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Holborn, Bethnal Green, Southwark, Camberwell, and Deptford. The 22 cases of puerperal fever notified during the month included three in Hammersmith, three in Bethnal Green, three in Lambeth, two in St. Pancras, two in Poplar, and two in Wandsworth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various metropolitan boroughs, the deaths occurring in public institutions having been distributed among the several boroughs in which the deceased persons had previously resided. During the four weeks ending Dec. 31st the deaths of 6555 persons belonging to London were registered, equal to an annual rate of 18·4 per 1000; in the three preceding months the rates had been 14·0, 14·3, and 14·6 per 1000. The lowest death-rates in London last month were 12·8 in Hampstead, 13·4 in Stoke Newington, 14·0 in Woolwich, 14·9 in Deptford, 15·0 in Greenwich, and 15·1 in Lewisham; while the highest rates were 21·7 in Stepney, 21·9 in Holborn and in Bethnal Green, 23·9 in Bermondsey, 25·0 in Finsbury, and 25·5 in Shoreditch. The 6555 deaths from all causes included 389 which were referred to the principal infectious diseases; of these, 124 resulted from measles, 33 from scarlet fever, 65 from diphtheria, 80 from whooping-cough, 28 from enteric fever, and 59 from diarrhœa. No death from any of these diseases was recorded last month in Stoke Newington or the City of London; the lowest death-rates from the principal infectious diseases in the aggregate occurred in Kensington, the City of Westminster, Holborn, Camberwell, and Deptford; and the highest rates in Hammersmith, Fulham, Finsbury, Shoreditch, Bethnal Green, Poplar, and Bermondsey. The 124 fatal cases of measles showed a decline of 107 from the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Islington, Hackney, Finsbury, Shoreditch, Bethnal Green, and Bermondsey. The 33 deaths from scarlet fever were 19 below the corrected average number; among the various metropolitan boroughs this disease showed the highest proportional mortality in St. Marylebone, Shoreditch, Bermondsey, Wandsworth, and Woolwich. The fatal cases of diphtheria numbered 65 last month, against an average of 173 in the corresponding period of the ten preceding years; the highest death-rates from this disease occurred in Hammersmith, Hackney, Bethnal Green, Poplar, Lambeth, Lewisham, and Woolwich. The 80 deaths from whooping-cough showed a decline of 39 from the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Hammersmith, Fulham, St. Marylebone, Shoreditch, Bethnal Green, Southwark, and Bermondsey. The 28 fatal cases of "fever" showed a decline of 39 from the average number in the corresponding periods of the ten preceding years; the greatest proportional mortality from this

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CITIES AND BOROUGHS.	Estimated population in the middle of 1904.	NOTIFIED CASES OF INFECTIOUS DISEASE.										DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,648,950	16	1082	520	—	162	4	22	368	—	2174	6·1	—	124	33	65	80	—	28	—	89	389	1·1	6525	18·4	136
West Districts.																										
Paddington	146,975	—	29	13	—	4	—	—	3	—	49	4·3	—	—	1	1	3	—	1	—	1	7	0·6	183	16·2	103
Kensington	179,236	—	16	9	—	9	—	1	13	—	48	3·5	—	—	1	—	1	—	—	—	3	5	0·4	222	16·1	164
Hammersmith	117,412	—	46	16	—	2	—	3	4	—	71	7·9	—	1	1	4	9	—	1	—	3	19	2·1	175	19·4	195
Fulham	152,482	—	31	19	—	3	—	—	10	—	63	5·4	—	1	1	1	9	—	1	—	6	19	1·6	224	19·2	164
Chelsea	74,329	—	18	6	—	—	—	1	3	—	28	4·9	—	—	1	1	2	—	—	—	—	4	0·7	109	19·1	155
City of Westminster	177,321	—	23	2	—	3	—	—	9	—	37	2·7	—	—	—	2	2	—	1	—	2	7	0·5	222	16·3	116
North Districts.																										
St. Marylebone	130,337	—	15	5	—	4	—	—	8	—	32	3·2	—	—	2	1	3	—	—	—	2	8	0·8	200	20·0	84
Hampstead	86,663	—	15	2	—	4	—	1	7	—	29	4·4	—	—	—	—	2	—	1	—	1	4	0·6	85	12·8	100
St. Pancras	235,936	1	39	23	—	15	—	2	19	—	99	5·5	—	11	1	2	4	—	1	—	—	19	1·0	371	20·5	130
Islington	341,044	—	86	20	—	5	—	1	20	—	132	5·0	—	20	4	2	5	—	2	—	1	34	1·3	460	17·6	125
Stoke Newington	52,445	—	11	4	—	—	—	—	5	—	20	5·0	—	—	—	—	—	—	—	—	—	—	—	54	13·4	99
Hackney	226,266	—	62	37	—	15	—	—	28	—	142	8·2	—	10	1	5	—	—	3	—	1	20	1·2	328	18·8	153
Central Districts.																										
Holborn	57,161	—	11	2	—	4	—	—	8	—	25	5·7	—	—	—	—	1	—	1	—	—	2	0·5	96	21·9	103
Finsbury	98,958	—	13	4	—	7	—	—	8	—	32	4·2	—	11	—	1	—	—	1	—	2	15	2·0	190	25·0	133
City of London	23,482	—	1	4	—	1	—	—	1	—	7	3·9	—	—	—	—	—	—	—	—	—	—	—	36	20·0	100
East Districts.																										
Shoreditch	117,033	—	29	15	—	4	—	1	10	—	59	6·6	—	11	2	—	4	—	2	—	2	21	2·3	229	25·5	194
Bethnal Green	130,207	1	48	28	—	8	3	3	22	—	113	11·3	—	7	1	3	3	—	1	—	4	19	1·9	219	21·9	130
Stepney	303,791	—	85	45	—	14	—	—	23	—	167	7·2	—	9	1	4	3	—	2	—	9	28	1·2	506	21·7	132
Poplar	169,905	—	43	56	—	7	—	2	16	—	124	9·5	—	6	1	12	1	—	—	—	7	27	2·1	256	19·6	143
South Districts.																										
Southwark	207,937	—	30	36	—	7	—	1	23	—	97	6·1	—	3	1	2	7	—	1	—	—	14	0·9	338	21·2	144
Bermondsey	129,397	—	30	18	—	4	—	—	8	—	60	6·0	—	5	4	2	4	—	—	—	1	19	1·9	237	23·9	159
Lambeth	310,359	—	62	34	—	6	1	3	19	—	125	5·3	—	1	1	7	7	—	2	—	5	23	1·0	422	17·7	138
Battersea	175,465	—	50	20	—	5	—	—	11	—	86	6·4	—	4	1	—	1	—	2	—	—	8	0·6	215	16·0	137
Wandsworth	257,448	1	103	34	—	8	—	2	24	—	172	8·7	—	11	3	4	3	—	2	—	1	24	1·2	305	15·4	134
Camberwell	288,384	—	76	11	—	4	—	1	31	—	123	6·0	—	—	1	1	5	—	1	—	3	11	0·5	323	16·2	145
Deptford	113,509	7	35	9	—	3	—	—	13	—	67	7·7	—	—	—	1	—	—	—	—	2	3	0·3	130	14·9	99
Greenwich	101,651	—	18	5	—	8	—	—	9	—	40	5·1	—	4	1	—	1	—	1	—	1	8	1·0	117	15·0	126
Lewisham	140,401	—	28	12	—	6	—	—	5	—	51	4·7	—	2	1	3	—	—	—	—	2	8	0·7	163	15·1	119
Woolwich	123,416	6	29	31	—	1	—	—	8	—	75	7·9	—	4	2	6	—	—	1	—	—	13	1·4	133	14·0	103
Port of London	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

disease occurred in Hampstead, Hackney, Holborn, Shoreditch, and Battersea. The 59 deaths from diarrhœa were slightly in excess of the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Hammersmith, Fulham, Bethnal Green, Stepney, and Poplar. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was more than 43 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 136 per 1000. The lowest rates of infant mortality were recorded in St. Marylebone, Hampstead, Stoke Newington, the City of London, and Deptford; and the highest rates in Kensington, Hammersmith, Fulham, Chelsea, Hackney, Shoreditch, and Bermondsey.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet-Surgeon James Charles Francis Whicher has been placed on the Retired List at his own request (dated Jan. 1st, 1905).

The following appointments are notified:—Fleet Surgeon V. G. Thorpe to the *Victorious*. Staff Surgeon T. C. Meikle to the *Majestic*. Surgeons: C. J. E. Cock to the *Vernon* for the *Furious*; J. Whelan to the *Vivid*; T. H. Vickers to the *Wildfire* for the *Endymion*; J. Lightfoot to the *Excellent*; N. J. Roche to the *Vivid* for Plymouth Hospital; W. H. Thomson to the *Russell*; G. M. D. Richards to the *Fire Queen*; A. D. C. Cummins to the *Drake*, on recommissioning, and H. Woods to the *Vivid*, to be lent to the *Circe*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel R. H. Forman joins at Woolwich. Captain J. M. Buist is under orders for service in South Africa. Captain A. C. Lupton now at Hounslow, is to be attached to the North-Eastern District (Headquarters, York). Surgeon-Lieutenant-Colonel J. Magill, from the Coldstream Guards, to be Lieutenant-Colonel, vice J. I. Routh, promoted, with seniority next above P. H. Johnston, C.M.G. (dated Dec. 3rd, 1904). Captain W. J. P. Adye-Curran is placed on temporary half-pay on account of ill-health (dated Dec. 23rd, 1904). Captain A. J. M. Cuddon-Fletcher resigns his commission (dated Jan. 11th, 1905) Lieutenant L. Cotterill to be Captain (provisionally) (dated Dec. 5th, 1904).

INDIAN MEDICAL SERVICE.

The King has approved of the following promotions among officers of the Indian Medical Service:—*Bengal Establishment:* Majors to be Lieutenant-Colonels (dated Oct. 1st, 1904): John Tasman Waddell Leslie, David Prain, Arthur Thomas Bown, Upendra Nath Mukerji, and William Locking Price.

The King has also approved of the retirement from the service of the undermentioned officers:—Surgeon-General David Sinclair, C.S.I. (dated Nov. 15th, 1904); Colonel Bartholomew O'Brien (dated Dec. 3rd, 1904); and Lieutenant-Colonel William Locking Price (dated Dec. 4th, 1904).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Fifeshire: Supernumerary Surgeon-Major (Honorary Captain in the Army) S. Linton resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated Jan. 7th, 1905). 2nd East Riding of Yorkshire: Surgeon-Lieutenant A. W. Scott to be Surgeon-Captain (dated Jan. 7th, 1905). *Rifle:* 4th Volunteer Battalion the Royal Fusiliers (City of London Regiment): Supernumerary Brigade-Surgeon-Lieutenant-Colonel W. D. Waterhouse (Senior Medical Officer, 2nd London Volunteer Infantry Brigade) is granted the honorary rank of Surgeon-Colonel (dated Jan. 7th, 1905).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Manchester Companies: The undermentioned Lieutenants to be Captains: H. G. Parker (dated Jan. 7th, 1905), W. R. N. Smithard (dated Jan. 7th, 1905), and C. W. S. Saberton (dated Jan. 7th, 1905).

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on Jan. 10th, Sir J. Dick, K.C.B., being in the chair, the sum of £90 was distributed among the several applicants.

JANUARY ARMY ORDERS.

An abstract of Royal Warrant, Instructions, Regulations, &c., promulgated to the army on Jan. 1st has been published in the different service journals, from which it would appear that these cover a wide extent and more or less concern every branch of the service down to the announcement of the fact that the short-lived *Army Journal of the British Empire* has ceased to exist.

DEATHS IN THE SERVICES.

Brigade-Surgeon James Dow Sainter recently at Chester Villa, Craigellachie, aged 70 years. He joined the army as an assistant surgeon in 1859 and served with the Cavalry Division throughout the campaign of 1860 in China. After service in India he retired in 1880.

THE WAR IN THE FAR EAST.

The year 1905 has opened with gloomy prospects, so far as can be seen, for the Russian army in the Far East. When writing last week we said that while General Stoessel's heroic defence of Port Arthur had compelled the respect and the admiration of all, friends and foes alike, the news of the capitulation of the beleaguered fortress had given rise to an intense feeling of relief, in that an end had come at last to the sufferings and further futile sacrifice of life on the part of its devoted garrison. Its complete surrender has since taken place and 878 officers, with some 23,000 or 24,000 rank and file, have been handed over to the Japanese authorities. Of the 878 officers about half have given their parole. Apparently nothing could have exceeded the mutual courtesy and the good feeling exhibited by the rival generals—General Nogi and General Stoessel—at their meeting or the consideration, kindliness, and respect shown by the Japanese to the Russian troops as they marched through the lines of the investing army. Among those who marched out were 100 medical officers. According to Japanese estimates the total Russian casualties during the siege of Port Arthur amounted to 35,000. It does not seem to be quite clear, however, whether the total number surrendering at the end of the siege is inclusive or exclusive of the sick and wounded. We do not yet know what were the total casualties incurred by the besieging Japanese in their various assaults but these were undoubtedly largely in excess of those of the besieged garrison. It is reported that the Japanese since September last had prepared medical supplies for 20,000 men and these supplies are now proceeding by railway from Dalny to Port Arthur. Very many hospital attendants together with stores have been sent by the Japanese into the place. The Chinese have already set to work to rebuild their houses, while large parties are working everywhere burying the dead. It is much to be regretted that, owing to some misunderstanding which has since been satisfactorily explained, H.M.S. *Andromeda*, which had very promptly left Wei-hai-wei on receipt of the news of the fall of Port Arthur with stores, provisions, surgeons, and surgical staff to succour the Russian sick and wounded, failed to effect a landing. Scurvy was widely prevalent among the troops and in Port Arthur during the siege diseases of various kinds had made great ravages among them. Dysentery, typhus (typhoid fever?), and scurvy were the main causes of death. The ghastly spectacle presented inside the town and the fortress after their surrender fully bore out General Stoessel's despatch of Dec. 28th, 1904. It suffices to say that nothing could well have been worse than the state of things to which the besieged had been reduced. Of the original garrison of 35,000 nearly one-third had died and less than an eighth were capable of carrying arms. With regard to the belligerent armies confronting one another on the Shaho the dead-lock still continues, at any rate so far as any important or decisive movements are concerned. The *Wochenblatt* has collected information regarding the Manchurian armies as to the losses in killed, wounded, and missing in certain actions and operations. The Russian statistics are taken from the *Siberian Medical Notes*. From these it would appear that the Russian total of 70,354 includes 341 officers and 8730 men killed, 1506 officers and 49,626 men wounded, and 66 officers and 10,085 (mostly killed) missing. Apart from the achievement of some striking military success on the part of the Russians, which would, of course, upset all calculations, it seems to us

that everything hinges on the question of supply. Unless an army in the field, and especially in a winter campaign, can be well fed and clad it cannot be kept in health and what may be termed fighting fettle. The Russians have, we believe, been very successful hitherto in their commissariat arrangements. Can these be maintained, with a sufficient supply of ammunition also, on the railway service which they have, or hope soon to have, at command?

The special committee of the Grand Duchess Elizabeth Theorodovni has received from General Kuropatkin a telegram in which he observes that from the beginning of the war to Dec. 13th, 1904, 1090 officers and 19,815 privates have been sent back to Russia; of these 520 officers and 5085 privates were wounded. Of the total number of privates sent home, 2897 had their discharge from the service because of unfitness through their wounds, and 5999 were released from service for one year.

Correspondence.

"Audi alteram partem."

THE ASYLUM MEDICAL SERVICE.

To the Editors of THE LANCET.

SIRS,—Your correspondent "M.B.," in the issue of THE LANCET of Dec. 31st, 1904, p. 1888, draws attention to a great blot in asylum organisation—viz., the poor pay and the enforced celibacy of the second medical officer who often is, and always should be, the deputy medical superintendent. The medical staffs of asylums in England are still far from adequate to the work they have to do and compare most unfavourably with those provided in continental and American asylums. This relative inadequacy is still further increased by the vast amount of statutory clerical work in the English asylums which occupies much time and diverts attention from more important matters. If the second and third medical officers in our large asylums were paid and accommodated in a manner that would admit of their being married much good would result in the treatment of the insane. Little progress in this direction can be hoped for until the treatment of the insane is placed under the direction of a "Minister of National Health."

The Lord Chancellor under existing conditions is physician-in-chief to 100,000 insane sick persons, with the result that the Lunacy Commission is not organised as a medical but as a legal body, in which the medical element is so outnumbered and so overburdened that it is practically powerless. Hence the predominant idea in regard to asylums is to place legal matters first and medical treatment a bad second. Until this mediæval absurdity is abolished and asylums placed under a medical authority there is no possibility of reform in this or many other much more grievous methods of lunacy maladministration.

I am, Sirs, yours faithfully,
Jan. 9th, 1905. H. RAYNER, M.D. Aberd.

To the Editors of THE LANCET.

SIRS,—I am glad to find that the grievances of assistant medical officers in asylums for the insane have at last been given publicity in the columns of THE LANCET, and while "M.B.'s" letter in your issue of Dec. 31st seems to refer chiefly to county asylums, from my own experience the same restrictions seem to apply to those in private asylums. In the latter the medical superintendent has an even greater power than he has in the former. "M.B.'s" letter, had it been written by myself, could hardly have expressed my experience more exactly. Leave of absence ought not to be subject to the moods of the medical superintendent. He can, and in most instances does, go out and about as he thinks fit, but if an assistant medical officer wishes to go off duty he has to ask the superintendent before he can do so. Again, leave ought not to be confined to so many hours a day or week, but one ought to be able to reckon on having a night off once a month, as is the case with nurses and attendants in some asylums, and a week-end once a quarter would not be asking too much when one takes into consideration the nature of the work and surroundings. Again, a superior officer ought not to be able to interfere with the prescriptions of the inferiors. Yet this I have frequently seen done and that without any sort of consultation between the two. In fact, I have known a superior officer tell his inferior that he "would not give such a drug to his patients," in spite of the drug in question being one in use daily for the disease under consideration. It is this overbearing conduct that gives rise to a great deal of the dissatisfaction that exists in institutions. I trust the Commissioners will now inquire into the conditions under which assistant medical officers work, as they have done in the past in the case of nurses and attendants.—I am, Sirs, yours faithfully,

Jan. 3rd, 1905. MEDICO.

THE TREATMENT OF PARALYSIS IN CHILDREN.

To the Editors of THE LANCET.

SIRS,—I have read with much interest Dr. Alfred A. Mumford's article in THE LANCET of Jan. 7th, p. 16, on the treatment of paralysis in children, which I am sure will be very useful by calling attention to the advantages of systematically encouraging voluntary movement in this class of cases. I am convinced that this is by far the most efficacious method of treatment and I thoroughly agree with Dr. Mumford's statement that "every fresh effort made by the child, and especially every successful effort, in achieving a new organised movement becomes in its turn a very potent therapeutic agent." It is astonishing to observe at how early an age a child can be taught to make systematic movements and I have for many years been in the habit of treating quite young children by having them taught to practise voluntary muscular efforts against resistance. In a book on orthopædic surgery published in 1881 I wrote: "The consequence of this [infantile paralysis] is a disturbance of the muscular equilibrium whereby the opponents of the paralysed muscles having no opposition to their action become gradually shortened and their function being in abeyance they also lose activity. Thus the paralysis of one set of muscles leads indirectly to the disuse and loss of power in others and a limb may be rendered almost useless by the paralysis of but a few of its more important muscles."

I would point out, moreover, that in partial paralysis of a limb many movements can be produced by practice in the vicarious action of the muscles, the functional activity of which is unimpaired. The most efficient means of developing the power of an enfeebled muscle is its moderate use alternating with its complete rest. A little ingenuity exercised in the application of this principle to cases of paralysis in children will generally be well rewarded by the resulting improvement. The methods recommended by Dr. Mumford are excellent and I can confirm his experience of the usefulness of the progression on all fours. Of course, deformities which mechanically interfere with the use of limbs must be remedied by tenotomy or other means, but a long experience leads me to protest against applying to young children cumbersome instruments of support which often prevent rather than assist muscular development. The children should be daily encouraged to the voluntary use of the weak muscles, so that the first return of voluntary power, however slight, may be exercised and developed.

I am, Sirs, yours faithfully,
WARRINGTON HAWARD.

Green-street, Grosvenor-square, W., Jan. 10th, 1905.

THE RECENT DISCUSSION ON CHLOROFORM ANÆSTHESIA.

To the Editors of THE LANCET.

SIRS,—May I be allowed to add a few words in confirmation of Dr. F. W. Hewitt's views on the inadequacy of a fixed percentage of chloroform vapour for anæsthetising all types of the human subject? In addition to muscular and plethoric persons, alcoholics, and heavy smokers there are other patients who exhibit a very considerable resistance to the effects of small quantities of chloroform: (*a*) those who have suffered from tropical fevers—and during the induction of anæsthesia especially; (*b*) the emphysematous; and (*c*) the febrile. With regard to the first class I do not know that it has been pointed out before that previous attacks of malarial and other tropical fevers render their subjects extremely difficult to anæsthetise, but in my experience such is the case, and I have records of a number in whom even a concentrated vapour of chloroform was barely

potent enough to produce muscular flaccidity during abdominal operations and in whom the use of a Junker's apparatus alone was a mere farce. Owing to the immobility of the chest walls in emphysematous patients the interchange of gases in the air sacs is effected largely by slow diffusion from the upper air passages and I have found that during induction of chloroform anæsthesia a resistance to the effect of the vapour much above the normal is due to this cause. Highly febrile patients may also exhibit undue resistance to small doses during induction on account of the decreased solubility of gases in liquid blood as the temperature of the latter increases.

I have long held the view from practical experience that chloroform does not prevent the transmission of nerve stimuli and the occurrence of reflex respiratory spasms so completely as ether, and in operations involving dilatation of the cervix uteri and sphincter ani or much dragging on pelvic and abdominal organs I frequently resort to ether when such spasms arise under chloroform in order to abolish them.

The form of obstructive stertor which Dr. Hewitt designates reflex spasmodic tongue retraction frequently occurs under chloroform in obese and plethoric subjects and is vibratory or rhythmic in character. It commences when a strong surgical stimulus is applied and ceases when it is discontinued. Failure to recognise the nature and causation of obstructive stertor due to reflex laryngeal spasm and to reflex tongue retraction may be readily understood when admitted by surgeons and physiologists who are not engaged in constantly administering anæsthetics to the human subject but shows a lack of accurate observation in any administrator of experience. So greatly do I desire to emphasise the importance of attending to the state of the corneal reflex and other clinical symptoms and of relieving stertor and even slight asphyxial factors directly they arise in chloroform anæsthesia, and as compared to these duties so trifling is the ease of learning dosage with very simple apparatus, that I regard the use of so-called percentage inhalers for chloroform with apprehension for the security of the public and the misguided practitioner who uses them.

I am, Sirs, yours faithfully,

H. BELLAMY GARDNER.

Mansfield-street, Portland-place, W., Jan. 3rd, 1905.

THE TREATMENT OF PULMONARY TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—I was very interested to read in THE LANCET of Dec. 31st, 1904, p. 1825, the very able address on the treatment of phthisis by Dr. Hector W. G. Mackenzie. There are, however, some points in it with which, as a sanatorium physician of some experience, I feel I must disagree. Dr. Mackenzie says that the good results obtained in English sanatoriums go far to show that our English climate is not unfavourable to lung patients and that even winter residence in England is not incompatible with an open-air life. Now I go so far as to say that these results prove conclusively that our home climate is as favourable to the proper carrying out of the treatment as that of any place abroad.

In Falkenstein Sanatorium, Germany, where I was first a patient and afterwards an assistant doctor, the winters are foggy, dull, and very rainy, with a little snow, yet the experience of many years has shown that patients do best there in the winter months. Dr. Mackenzie, I see, still clings to the myth that very high and dry altitudes are best for the consumptives. I am convinced, however, that a great many physicians, experienced in sanatorium work and otherwise, will agree with me when I say that results do not bear this out. On the contrary, these conditions are in a large proportion of cases distinctly harmful. At these high altitudes the tendency to hæmoptysis, heart trouble, &c., is enormously increased even in the early stages of the disease. Again, patients have not only the initial long journey to go through but they are frequently unable to complete the cure there. Generally they have to leave in the summer months—a fact which entails the worry and risk of travelling and changing to an absolutely different climate. In my opinion, too, a patient cured in his own country has a far better chance of keeping in good health than one cured elsewhere, because his body has been trained to withstand the variabilities of the climate in which he has to pass his life. Experience has also shown that patients cured in places like Davos have a much greater tendency to relapse when they go down to lower levels. I am glad that Dr. Mackenzie has given the weight of his great authority and experience against the practice of stuffing—a method of treatment which is, to say the least of it, most unscientific.

I am, Sirs, yours faithfully,

A. C. FALKINER, M.B. Dub.

Portbury, Somerset, Jan. 2nd, 1905.

THE ORGANISMS OF VARIOLA, VACCINIA, AND VARICELLA.

To the Editors of THE LANCET.

SIRS,—A case recorded by Dr. Richard Rolfe under the title of "A Case of Variola following an Unusual Course"[1] is of extreme interest and excites philosophical speculation as to the inner workings of the disease processes undoubtedly present. The researches of Guarnieri, Jackson Clarke, Calkins, and more recently of Dr. W. E. De Korté,[2] strongly point to protozoal organisms being the causal agents of variola, vaccinia, and varicella. Apparently one common organism running on different evolutionary lines is to be found in the pocks of these three affections, and now that Dr. De Korté[3] claims to have cultivated the organism in pure culture further scientific light on the subject may be expected at an early date.

I have long felt the conviction—based on clinical and epidemiological observations—that vaccinia, variola, and varicella are the products of the life-processes of one common type of organism existing under different evolutionary conditions. It appears as if we were on the verge of scientific confirmation of this speculation but many observations must yet be made before sufficient facts will be available for critical judgment and acceptance. I venture to suggest that in Dr. Rolfe's case the illness from Nov. 11th to 14th was undoubtedly an abortive attack of variola. In the light of Dr. A. E. Wright's researches this attack probably induced a "negative phase of immunity." The vaccine lymph inoculated on Nov. 16th contained the same pathogenic type of organism as that of variola but under different evolutionary conditions. This organism was stimulated by the abortive attack of small-pox to produce similar lesions to those found in variola; or, on the other hand, the variola organisms lying latent in the patient were stimulated into unusual activity by the vaccine organisms. The skin lesions appeared on the third day after vaccination. Further, the interaction of the two strains of the protozoal (?) organism evidently modified the ordinary phenomena of vaccination. My own practical experience teaches me that if an unvaccinated person attacked with small-pox *be vaccinated on the first day* of illness the skin lesions of small-pox may appear as usual on the third day, while those of vaccinia may run an almost normal course. I am inclined to look upon the rash in Dr. Rolfe's case as being more on the nature of a "vaccination rash" induced largely by the prior abortive attack of small-pox than as a genuine case of modified variola. But I express this opinion with all due diffidence. A clinical point of importance which would put this view out of court would be the presence of dark brown or black discoid scabs appearing on some of the lesions, supplanting the stage of suppuration.

In April, 1902, I saw a youth, aged 17 years, who had been revaccinated a few weeks previously but had in the meantime been in contact with a case of small-pox. He exhibited a hard shotty eruption of the face (not the forehead) and wrists and one papule on the arch of one foot but no constitutional symptoms were noted. The papules faded without passing through a vesicular stage. The case was isolated as possibly variola though I inclined to the diagnosis of a varioloid vaccination rash.

The record of a case of chicken-pox which shows some of the difficulties which beset medical men in making specific diagnoses may not be deemed unnecessary. On June 3rd, 1902, I was asked to see in consultation an unvaccinated boy, aged nine years. I found copious semi-puriform vesicles on the trunk and limbs, including two on the thenar eminence of the right thumb and five on the sole of the left foot. Several pocks were also present on the dorsal aspect of each foot. Here and there

[1] THE LANCET, Dec. 31st, 1904, p. 1833.
[2] THE LANCET, Dec. 24th, 1904, p. 1776.
[3] Practitioner, January, 1905, p. 51.

on the trunk and limbs "constellations" of vesicles were noted. On the face were observed papules and a few vesicles. A history was obtained of two previous cases of chicken-pox in the house. The patient had complained of backache and nausea on May 31st but had not been very sick. The temperature when I saw him was normal. There were very few pocks on the scalp and the lesions were more abundant on the upper parts of the limbs than on the lower. The balance of evidence was therefore in favour of a diagnosis of chicken-pox but we were getting sufficiently near the border-line in symptoms to take all due precautions as to isolation of the patient and to urge vaccination or revaccination of contacts.

The above cases in my own experience and the case recorded by Dr. Rolfe recall to my mind that so long ago as 1889 my friend Sir William J. Collins[4] pointed out that "specificity" depends on the "soil on which the seed is sown; ..... that there is in disease, as in all nature, a tendency of the common to become the specific, the homogeneous to give birth to the heterogeneous." I have made certain observations and deductions in connexion with some other infectious diseases (which I shall record in another place) which all point towards the part played by evolutionary factors in disease processes.

I am, Sirs, yours faithfully,

J. T. C. NASH, M.D. Edin., D.P.H. Cantab.,
Medical Officer of Health, Southend-on-Sea.

Jan. 7th, 1905.

THE EVOLUTION OF MAN'S DIET.

To the Editors of THE LANCET.

SIRS,—I quite agree with Dr. J. Sim Wallace that we moderns could greatly increase our power to cope with coarse vegetable foods if we from early years accustomed ourselves to them. I believe, however, that even then we should, in respect of this power, fall far below the apes. Not the most primitive race of man could subsist on the natural diet of these creatures, and, though very little anatomical difference can be discovered between the digestive organs of man and the anthropoid, we must, I think, postulate a wide difference in the digestive capabilities of the two. Though the vegetable food of the anthropoids is richer in cellulose than our own, yet even they would appear to avoid as far as possible dense cellulosic substances. Dr. P. C. Mitchell, the able secretary of the London Zoological Society, informs me that the chimpanzee is quite a dainty feeder, not only discarding the skin of the banana but carefully peeling and removing the pips of a choice apple before eating it.

I must doubt whether the bitter, acid, and acrid principles which enter so largely into the natural diet of the anthropoids facilitate in any substantial degree the digestion of cellulose, but that they may play a useful part in digestion and nutrition, and that the diet of us moderns is all too deficient in them I can well believe. Indeed, I venture to think that here Dr. Wallace makes a most valuable suggestion. There can be no doubt that both man and the apes have an instinctive liking for substances of this kind. Dr. Mitchell finds that when a sick chimpanzee is off its food, and when every other plan has failed, he can induce the invalid to eat by flavouring its viands with rhubarb; and we know that children often display a violent craving for unripe fruit, in rebellious protest, it would seem, against "the soft, bland, and generally alkaline food" on which they are nowadays nurtured. Whether this bland diet is also, as Dr. Wallace suggests, responsible for their craving for sugar is well worth being put to the test.

I am, Sirs, yours faithfully,

HARRY CAMPBELL.

Wimpole-street, W., Jan. 8th, 1905.

To the Editors of THE LANCET.

SIRS,—Dr. Harry Campbell's views as to the "evolution of man's diet" must have induced some of your readers to be more particular as to diet in the treatment of disease and so far will do good but the study of diet is a most complex subject and deserving the attention of every member of the profession. It is a subject in which everyone ought to take an interest, since not only the body but the mind depends upon what we put into the stomach. Drugs have dominated our profession since the days of the alchemists and now there are signs that diet is about to claim more attention, the daily press and the drama having taken it up. From the attention I have been able to give to the subject I am inclined to think that we are suffering from having departed from the diet of primitive man before fire was stolen from the gods and when he ate only fruit and nuts, his natural food. Our food now (apart from the flesh of animals which causes so much disease, directly and indirectly) consists very largely of starch, the conversion of which into dextrine is a great tax on the energy of the digestive system. Good cooking may lessen the danger of eating such food, but however well cooked our food ought to be masticated thoroughly and kept in the mouth until into the fluid form, nothing except fluid being allowed to enter the stomach. With practice in chewing food the tongue becomes like a filter that will allow no solid substance to pass. Such chewing takes time but it is time well spent and food so chewed will go twice as far as food bolted, as it is too apt to be. Scientific observations on the value of such chewing are much needed and when made will be most valuable in the study of dietetics.

I remain, Sirs, yours faithfully,

JOHN HADDON, M.D. Edin.

Denholm, Hawick, N.B., Jan. 8th, 1905.

THE L.S.A. QUALIFICATION AND MEDICAL APPOINTMENTS.

To the Editors of THE LANCET.

SIRS,—It is refreshing to find a member of the profession who is not an L.S.A. wielding his pen in favour of justice being done to the holders of this much belittled diploma in the matter of hospital appointments, &c. That the professional equipment of the Licentiates of the Apothecaries' Society is of a satisfactory character is shown by their success in the competitive examinations for the navy and army. I have before me a table[1] showing percentages of successes of holders of various degrees and diplomas at these examinations, from which I extract the following:—

L.S.A. alone	70	per cent.	successes.
Scottish Conjoint alone	39	,,	,,
Irish ,, ,, ...	34	,,	,,
Manchester degree ,, ...	62	,,	,,
Aberdeen ,, ,, ...	54	,,	,,
Edinburgh ,, ,, ...	50	,,	,,
Glasgow ,, ,, ...	66	,,	,,
Dublin ,, ,, ...	45	,,	,,
Royal University degree alone	63	,,	,,

These navy and army competitions are the only post-graduate tests in which all candidates appear on equal terms and the results should, I think, convince all impartial persons that the L.S.A. is not the inferior practitioner that the holders of these other degrees and diplomas often represent him to be and that he is capable of more than holding his own in professional competition. This being so, is it asking too much that the powers that be should give to the persons with this diploma proper and sufficient titles and that the ridiculous chatter about it being the lowest qualification for admittance to the Medical Register should cease? Is it not simple justice that all hospital appointments which are open to holders of Conjoint diplomas, &c., should be equally open to the L.S.A.? Your correspondent, "Not an L.S.A.," is quite right about the surgical examiners at the Apothecaries' Society being appointed by the General Medical Council, and I may add that it is the duty of these examiners (see Medical Act, 1886, Section 5, Paragraph 2) "to secure the maintenance of such standard of proficiency in medicine, surgery, and midwifery as is required under the foregoing provisions of this Act." The effect of this clause is that *every* final examination for the L.S.A. is conducted under the direct supervision of the General Medical Council's own appointed examiners who are responsible for the standard of efficiency. The same conditions now apply to the L.A.H. Irel. At no other qualifying examinations, whether for degrees or diplomas, are the interests of the public so carefully safeguarded. Medical members of

[4] Public Health, 1889.

[1] Brit. Med. Jour., Jan. 7th, 1905, p. 40, table vii.

hospital boards have no excuse for ignorance on this subject and it is their duty to correct it in the lay members.

I am, Sirs, yours faithfully,

A. RIVERS-WILLSON,
President of the Association of Physicians and Surgeons of the Society of Apothecaries.

Oxford, Jan. 9th, 1905.

LOCAL IRRITATION AND CANCER.

To the Editors of THE LANCET.

SIRS,—Now that the parasitic origin of cancer has almost come to be regarded as an impossible theory it may not be without interest to remind your readers that the older authorities considered the systemic origin of cancer as being necessary to its local evolution. At the present time the opinion seems to prevail that a relation exists between cholelithiasis and cancer. In this connexion the most suggestive theory of the origin of cancer is that which has been propounded by Mr. J. H. Webb of Melbourne—viz., that cell proliferation is due to the deposition of cholesterine in the tissues, either locally from injury or some nutritional disturbance in the liver, associated with deficiency of the bile soaps which normally hold cholesterine in solution. For his conclusions and treatment I would refer those interested to my recently published pamphlet "On Some Methods of Hypodermic Medication in the Treatment of Inoperable Cancer," in which I also describe some cases of my own treated with hypodermic injections of Chian turpentine, the effect of which, there is reason to think, is also that of a solvent of cholesterine.

In the same way I suggest that the presence of glycogen in new growths may be due either to undue local deposition in the tissues or dependent on some nutritional disturbance in the liver or pancreas leading to cell growth. Incidentally I might mention that in two cases of malignant disease recently which have come under my notice one or other parent died from diabetes. This, together with the comparative infrequency of glycosuria and cancer in the same patient, as I believe, is suggestive of some alternation or antagonism between the two diseases. Chiefly, therefore, the underlying theory here put forward is that cell proliferation or alteration of type of division may be dependent on some systemic condition and local irritation determine site of growth. Continued reflection on this subject has led me to believe that in dealing with cancer something more than purely local treatment is indicated—that is to say, that after the surgeon has removed the source of local irritation represented by the primary growth there should follow treatment directed to the systemic origin of the disease. Were the lines of treatment I have indicated in my pamphlet to be carried out subsequently to operation it is reasonable to hope that recurrence might not so frequently occur. This opinion has been partly based on the experience gained in the treatment of cases of cancer where the disease has passed beyond the sphere of surgical relief. If palliative results can be obtained in such unfavourable cases as these it is only reasonable to conclude that where the conditions are favourable the results should be eminently better and the tendency to recurrence diminished.

I am, Sirs, yours faithfully,

JOHN A. SHAW-MACKENZIE, M.D. Lond.

London, Jan. 2nd, 1905.

TICKS AND TICK-TRANSMITTED DISEASES.

To the Editors of THE LANCET.

SIRS,—To the list of countries mentioned by Dr. G. H. F. Nuttall in his paper at the Epidemiological Society[1] in which bovine redwater fever occurs, I can add the Republic of Colombia. It is prevalent in the south-western portion (and possibly elsewhere), i.e., far distant from Venezuela, which country Dr. Nuttall includes. Ticks also infest horses and dogs in the same districts, the former with oftentimes serious effects. Whether these are due merely to loss of blood or to some form of equine piroplasmosis such as is known in other countries I am unable to say.

I am, Sirs, yours faithfully,

M. D. EDER.

[1] THE LANCET, Dec. 24th, 1904, p. 1785.

CHICAGO.

THE DARK AND INSANITARY PREMISES USED FOR THE SLAUGHTERING OF CATTLE AND HOGS.—THE GOVERNMENT INSPECTION.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(*Continued from p. 83.*)

THE first or most obvious defect of the stockyards is the absence of slaughter-houses. Here living animals are treated in exactly the same manner as is ordinary raw material. The Chicago stockyards therefore consist of a number of factories instead of slaughter-houses. These various enterprises are grouped together on the same spot and work not in opposition but as "a combine" one with the other. Here the evident desire is to treat living animals as if they were bales of cotton, of wool, or of any other kind of raw material. What would have happened but for the intervention from Washington of the Federal Government and the prohibitive laws enacted by European States against Chicago products, it is appalling to conjecture. Left to themselves the organisers of this vast industry were not likely to consider that animals, whether living or recently slaughtered, are more liable than inorganic raw material to convey or to absorb germs of disease. That what is intended for food should be prepared in especially clean places is also insufficiently taken into account. The sole object seems to be to convert each animal into saleable product in the quickest and cheapest manner possible. For this the work has to be organised on a wholesale scale so as to pay the cost of labour-saving machinery and there must be the greatest possible subdivision of labour. In a word, the principles of modern industrialism have to be applied and there is no business in the world, not even at the Krupp works, where this done on a larger scale. Of course, all the private butchers have been bought up or driven out of existence for many a mile round by this huge monopoly. Private slaughter-houses were, and generally are, very defective when judged from the sanitary point of view; still they are preferable to slaughtering in factories. The number of animals killed is much smaller than in factories and this is done not upstairs but on the ground and in a little building like a stable where there is no difficulty in obtaining air and light. At the Chicago stockyards I was first taken to see the killing of pigs and found that outside the big factory buildings there are long, inclined, boarded passages up which the animals are driven. Thus the pigs are brought up to the height of the second floor. As they enter the main building each pig is caught by one of the hind legs. With rope and loop-knot and hook it is slung up, the head downwards and the neck exposed, at a convenient height for the slaughterer to strike. With great rapidity the suspended pigs are pushed on to a sort of passage about four feet broad where their throats are slashed open as they pass along. These rows of hanging pigs struggle violently, throwing out torrents of blood. Both sides of this death passage to the height of five feet are thickly caked with the blood of thousands of healthy and unhealthy pigs. Within less than a minute the dying pig reaches a long tank full of scalding water and in this the palpitating body is thrown, though life is probably not yet quite extinct. Standing in the damp and steam men armed with long prongs push the swine along. By the time when the hogs have floated down to the other end of the boiling-water tank they are sufficiently scalded for the bristles to be easily extracted. They are now put on a moveable counter or platform and as the hogs pass along other workers scrape the bristles off their backs. All this is done on the second floor of the building and there are suitable openings in the floor through which the blood flows to be collected and utilised below. At a subsequent stage the body is opened and the intestines are removed. Fortunately the law, not the local or State law, but the national or Federal law, stipulates that:—

> The head, tail, caul, or fat inclosed in the omentum of the animal and the entire viscera shall be retained in such a manner as to preserve their identity until after the post-mortem inspection has been completed, in order that they may be identified in case of the condemnation of the carcass. Should the carcass of any animal on the said post-mortem examination be found diseased or otherwise unfit for human food it shall be marked with a condemnation tag, the same to be attached with

re and seal, and the diseased organs or parts thereof if removed from e carcass shall also be marked with a condemnation tag. The con- mnation tag shall accompany the condemned carcass or its parts to the tank (whe.e they are destroyed).

According to the national law there must be two examina- ons—the ante-mortem and the post-mortem. The ante- ortem examination takes place in the cattle market when e animals are weighed while they are still the property of e farmers and cattle-rearers and before they have been rchased by the packers or provision dealers. The agents of

FIG. 5.

Scalding hogs.

the latter are consequently always on the look out and call the attention of the Government inspectors to any bad symptom or defect which they may detect. If at this stage the animal is condemned the loss falls on the farmer. If, however, the presence of disease is only discovered when the carcass is examined then the loss falls on the packer who had to buy the animal before he could kill it. So that while the packing-house interest is in favour of strict ante-mortem examination it stands to lose by the post-mortem examination. Nor is this latter easy to carry out considering the sort of superstitious fear that exists in America of anything which might be considered as "interfering with business." The consequence is that there is a staff of officials appointed by the authorities at Washington whose sole business it is to see that nothing shall be placed on the market as food which is not absolutely wholesome. As civil servants and as protectors of the public they should hold the highest position in the stockyards. This is a noble calling and by reason of the useful work which the veterinary surgeons perform and the scientific training which they have received they surely stand immeasurably above mere speculators in hogs' flesh. But there is a singular lack of the sense of dignity in the United States. This came specially under my notice at St. Louis where the grandeur of the World's Fair was largely spoilt by the undignified rowdyism and vulgarity that were allowed to prevail even within its precincts. At the Chicago stockyards I could not but feel scandalised and humiliated when I saw the foul and abominable premises in which the representatives of science, the representatives of the United States of America, the representatives of the majesty of the law, condescended to work daily in the accomplishment of their mission. This mission would be better accomplished if the veterinary surgeons, as members of a liberal profession and as representatives of a great country, refused to work in these noisome places. Such a course would at once stop the present abominations by compelling the hog merchants to reconstruct their premises. It is a very good thing that inspectors are appointed by the authorities at Washington but it would be better still if they were first sent to Berlin to learn not only how a slaughter-house ought to be managed and constructed but also to observe how those who have the honour of being intrusted with a public duty are more respected than business men, however rich.

Slaughtering, it need hardly be said, should be done on the ground, but the ground should be rendered water-tight by a special non-slippery, convex, and elaborately drained paving. The surrounding structure should be built exclusively of iron, glass, or enamelled brick. Of course there should be no upper floor and there should be ventilation above and on both sides. That is how slaughter-houses in the technical sense of the term are built. At Chicago there are, I cannot repeat too often, no slaughter-houses at all. The factories consist of such huge blocks that the light which might penetrate through the windows if they were kept clean cannot reach the centre of the buildings. Consequently a large proportion of the work has to be done by artificial light even in the brightest portions of fine summer days. Thus, for instance, I saw bullocks slaughtered in the following manner. The animals are brought up to a huge building which looks more like a lofty prison than a slaughter-house. As they approach the outer wall men strike them on the head with a mallet. Then a sort of wooden partition gives way and lets the half-stunned animals

FIG. 6.

Removing hides.

fall into the basement of the building beyond. As they come tumbling in men seize their hind legs, affix ropes, and they are strung up to some machinery above that moves them along with their heads hanging downwards. Sometimes, however, and before this can be done an animal jumps up and rushes about. It has then to be shot at the risk of the bullet striking an onlooker. When I inquired why a leather gear was not affixed to the bullock's head with a nail so placed in it that, however clumsy the stroke given, it would cause the nail to penetrate the brain and instantly

kill the animal, I was told that such a process would take far too much time. Indeed, so great is the hurry that the unfortunate animals are frequently not given time to die. First, they are dropped into the building, though some of them may be insufficiently stunned. Then, when strung up, the machinery carries the living animal forwards and men have to run after it to cut its throat, while others follow with great pails to catch the blood; and all this without interrupting the dying animal's journey to the part of the factory where the next process of manufacture begins. Sometimes the cattle are struck down and stunned more quickly than the men can pick them up and cut their throats, so they are left to live some time suspended in the air by their hind feet. The machinery carries forwards the animals that are hooked on to it regardless of their agony. On they go from stage to stage of manufacture and the men have to keep pace with them whether dead or alive. Quickly the throats are cut, no time can be lost to let the animals bleed, a man with a pail must walk by their side to catch the blood. Much of the hot blood is spilt over the man or over the floor; that does not matter so long as a small section of a minute is economised. In a short time the bullock, whether it has bled sufficiently or not, and while still warm, will reach one of the darkest, lowest, and worst ventilated portions of this huge and gloomy building. Here the entrails are taken out. The dirtiest work is done in the closest, the darkest, and the dirtiest place, instead of being carried on in the open air or under such slight shelter as would not prevent the free access of air and sunshine. It would be quite impossible to disinfect such premises. There are innumerable rafters, sharp angles, nooks, and corners where blood, the splashing of offal, and the sputum of tuberculous workers can accumulate for weeks, months, and years. It does not look as if the floors are ever really cleaned, though I am told they are occasionally scrubbed. Nevertheless, it is difficult to believe in any genuine cleanliness, for here is the evidence of the windows about which there can be no doubt and they are heavily caked with dirt. Where are the impermeable walls and floors which every day, and sometimes more than once in the course of the day, should be flushed out with the fire hose and so thoroughly scoured that not a speck of blood, dirt, or dust should remain? Where, again, are the portable fire and boiler which can be wheeled or carried up to any corner of the entire premises and where with hose a jet of steam under pressure can be thrown into the smallest crevice or crack? Thus with superheated steam disinfection is rendered doubly sure. In many towns of Europe where there are not nearly as many animals killed as at Chicago purifying machines of this description are used. Why are they unknown at Chicago? As Chicago is the greatest slaughter-place in the whole world the greatest possible precautions ought to be taken. The reverse, however, is the case and it is safer to buy meat from the small retail municipal slaughter-house of a petty provincial town than from the world-wide provision packers of Chicago.

An official of the Canners' Union assured me that more than two-thirds of the members of his union worked by artificial light. He had not himself seen daylight for many months and so far as the enjoyment of sunshine was concerned they might as well be miners working in a coal-pit. Yet if ever there was an occupation requiring plenty of daylight and fresh air it is that of cleaning, cutting up, preparing, and canning animal food. But the buildings are so large and square in shape that, as already explained, the light from the windows cannot penetrate to the centre; while machinery passing carcasses, furniture, fixtures, and partitions shut out the light from many of the places that it might otherwise reach. Yet it is obvious that work of this description—the manipulation of animal substance intended for food—should be done only in the broadest daylight and in the purest atmosphere. In these dark places the meat falls on the floor and comes in contact with the dirt from the boots of the workers and the bacilli from the sputum of a population among whom pulmonary tuberculosis is more prevalent than among any other section of the inhabitants of Chicago. Close at hand there are closets and they are in some places only a few feet from the food. These closets are at times out of order, deficient, defective, or even entirely devoid of flushing. They are all the more offensive as they are not sufficiently numerous for the large staff of workers who have to use them. This is especially the case in one of the rooms where soup is made for preserving in tins. In one department there were two closets, neither of which could be flushed, provided for 80 women. Little or no thought has been taken as to the welfare of the workers. It was only after much agitation that the work was more evenly distributed by killing during four instead of two days. Then there used to be no provision whatsoever for the workers' meals and they had to eat amid the filth in which they worked. Even to-day and after many protests and agitations there are no proper lavatories for the workers to wash themselves conveniently and to change some of their clothes before they begin handling the food which is sent from Chicago to all parts of the world. Indeed, it will be found that many of the workers hold the food which they produce in wholesome abhorrence. At the same time there is a great deal of bitterness of feeling and a consequent tendency to exaggerate. Besides, it is surprising how ignorant these people are concerning the special laws by which their industry is governed. For instance, I was told that diseased and condemned carcasses which were put in at one end of the destructor to be converted into manure were promptly extracted at the other end and sold as meat. Now, the rules issued by the United States Department of Agriculture, dated June 27th, 1904, give minute details as to what diseases necessitate the destruction of the carcass and article 9 is entitled "Tanking." The carcass destructor in America is called a tank and the legal stipulations are that—

> All condemned carcasses and parts shall be tanked as follows. After the lower opening of the tank has been sealed by an employé of the department the condemned carcasses and parts shall be placed in the rendering tank in the morning and immediately a sufficient force of steam be turned into the tank to destroy effectually the meat for food purposes before the killing for the day is completed; or the condemned portions may be placed in the rendering tank at the close of the day, or when the killing is suspended, and both ends of the tank sealed, after which steam shall be turned into the tank until the meat is destroyed. Wire and lead seals will be provided by the department for sealing tanks.
>
> A sufficient quantity of low-grade offal (uteri, floor scrapings, trimmings from gutters' benches, skimmings from catch basins, unemptied intestines, omasa, paunches emptied but not washed, &c.) shall be tanked with all condemned carcasses (except those tanked for lard) to effectually render the ultimate product unfit for human food, or, if such offal cannot be obtained, the carcasses may be thoroughly slashed with a knife, then saturated with kerosene and placed in the tank.
>
> The seals of tanks containing condemned material shall be broken by an employé of the department when the tank is emptied during regular hours and at other times satisfactory arrangements for the breaking of such seals shall be made with the inspector in charge.

When only a part of a carcass is condemned no portion of the carcass can be disposed of except in the presence of the Government inspector, so that when stories go round about the selling of diseased meat the persons who tell them are either deliberately inventing or more probably confusing an ordinary cauldron with the destroying tanks. Also I was told that bruised and rejected hams were nevertheless sold and put on the market by cheap butchers; or else the bone may be cut out and the discoloured portion of the flesh near to the bone removed, the rest being utilised. Again, when meat that has been put in brine for pickling is found to smell hollow needles are driven into the flesh and brine is pumped into the body of the meat. This saves the time of penetration and men have assured me that when the meat still retained an unpleasant odour the operation was repeated. Nevertheless, I find some difficulty in believing these stories. They are the tricks of trade of the petty dealer and it is hardly conceivable that a gigantic business would compromise itself for the sake of saving a few shillings' worth of meat. On the other hand, where thousands of pounds are to be economised, there is a deplorable display of unscrupulousness. When a carcass or a portion of a carcass is condemned, in spite of stockyard gossip and scandal, I believe that it is conscientiously destroyed. It would not be worth while to defy the law for such a trifle. But, on the other hand, no proper destructor establishment has been built.

It is obvious that the destructors should be placed in a far-off and isolated corner. Any condemned carcass should at once be removed well away from all the buildings where food is prepared. Nothing of the sort is done. They are kept under the same roof on the same floor where food is being prepared for human consumption. Indeed, worse than this, the diseased carcasses are brought nearest to the windows so that there may be a better light to examine them. But, on the other hand, such air as may gain admittance into the huge building from these windows passes round, over, and between these diseased carcasses

before it can reach the moist meat that is being cut up and prepared at a short distance. When, finally, the carcass is taken to the destructor the opening of this tank, at least of the tank which I saw, is inside a large building in the floor and round it many people were working. The place is dark, wet, and altogether in a most unsuitable condition for the handling of meat. Nevertheless, not only is human food prepared here but diseased carcasses condemned as unfit for human food are dragged through the compartment. The lid of the destructor is removed within a few feet of meat that is to be eaten. The promiscuity of the two occupations, the examination and destruction of diseased carcasses and the preparing, the cutting up, or the washing of carcasses that are not diseased, is most disgusting and reprehensible. The best destructor I have seen is that of the municipality of Hamburg and it is situated not only outside the town but well away from the slaughter-house.[1] Formerly the destruction of diseased carcasses cost the town of Hamburg a considerable sum. But now the dry brown manure powder into which the carcasses are converted sells so well that there is a profit, even after paying all the working expenses. On the other hand, the interests of the public health are absolutely secured. The progressive energy of the inhabitants of Chicago has been the theme of many eulogies; but why are there no properly installed destructors for dealing with the many thousand diseased carcasses that are yearly condemned in the stockyards?

(To be continued.)

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool School of Tropical Medicine: Visit of the Princess Christian and Mr. Joseph Chamberlain: Departure of the Fourteenth Expedition to the Tropics.

AN interesting address has been arranged by the School of Tropical Medicine to be delivered on Jan. 12th in the small concert room at St. George's Hall by Major Ronald Ross, C.B., late I.M.S., on the subject of the Progress of Tropical Medicine. The Princess Christian and the Right Hon. Joseph Chamberlain, M.P., have accepted the invitation of Sir Alfred Jones, K.C.M.G. (the chairman of the school) to be present on the occasion. Invitations have also been issued to the subscribers to the school. Mr. Chamberlain's presence at the meeting will be gratifying in view of the prominent part played by him in the foundation of the Schools of Tropical Medicine in London and Liverpool. The distinguished visitors will be the guests of the Earl of Derby, K.G., at Knowsley. The Earl and Countess and the Lord Mayor have also promised to attend the lecture. On Dec. 31st, 1904, the s.s. *Sobo* sailed from the Mersey for West Africa and amongst the passengers were Colonel G. M. J. Giles, I.M.S., late sanitary commissioner for the North-West Provinces of India, and Dr. R. E. M'Connell, a young Canadian, both being members of the fourteenth expedition sent out by the Liverpool School of Tropical Medicine for the further investigation of malaria and other tropical diseases. Just before the expedition sailed a message was received from Sir Alfred Jones wishing the members every success. Mr. W. Adamson, the president of the Royal Southern Hospital, and Mr. A. H. Milne, the secretary of the school, were present to bid Colonel Giles and Dr. M'Connell *bon voyage*, and they took their departure amid many good wishes from other friends.

Proposed Closing of Cellar Dwellings in the City: Extraordinary Result of a Town's Meeting.

The health and the parliamentary committees of the city council by unanimous votes had approved of the recommendation of the medical officer of health (Dr. E. W. Hope) to close (by degrees and with due regard to the rehousing of the dispossessed) 2500 out of 3000 cellar dwellings in the city which, in his opinion, were insanitary. The recommendation of both committees was subsequently endorsed by the city council by the large majority of 90 out of 98 members present. Under the Borough Funds Act the approval of a town's meeting was necessary before Parliamentary powers could be sought for the purpose. This and other beneficent sanitary measures were howled down with gibes and jeers by the town's meeting and sanitation in Liverpool received a disagreeable check. Clearly the Borough Funds Act needs amendment; the decisions of the municipal representatives of the people to appeal to Parliament should not require the approval of a meeting easily packed by interested people. The chairman of the health committee (Alderman Menlove), in an appeal to the meeting to ratify the vote of the ratepayers' representatives, said that he had a wide experience of cellar dwellings and many of them were not fit to keep a dog in. There was no doubt that many of them were most unwholesome and good dry dwellings must be provided if the rising generation was to grow up in health and strength. Dr. R. Caton and other city councillors also made strong appeals for the ratification of the measure but all to no purpose, the clause being lost by a large majority.

Death of Dr. James Armstrong.

Dr. James Armstrong, formerly of 84, Rodney-street, Liverpool, died suddenly at Plas Bennett, near Denbigh, on Dec. 26th, 1904. Dr. Armstrong retired from practice in Liverpool about two years ago owing to delicate health. He received his medical education at the University of Edinburgh where he graduated as M.B. in 1868 and in the same year obtained the diploma of the Royal College of Surgeons of Edinburgh. He was formerly physician to the Liverpool Infirmary for Children, resigning that post on his election as honorary physician to the Liverpool Lying-in Hospital. He had an extensive midwifery practice and made many contributions to the medical journals on the literature of that subject. He was of a quiet and gentle demeanour and made many friends among the profession in Liverpool where the intelligence of his death was received with manifestations of much sympathy. He was a widower and leaves a son and a daughter.

Jan. 10th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

The Annual Dinner of the Past and Present Students of the School of Medicine.

THE annual dinner of the past and present students of the Leeds School of Medicine which was held recently was an event of unusual importance. Always a popular gathering, well attended, and affording to former students an opportunity of meeting again and renewing acquaintances, it derived an additional interest on this occasion as being the first dinner held since the granting of the University charter. During the last 20 years the Leeds School of Medicine has been officially known as the medical department of the Yorkshire College and it was a comfort to feel that the old term "School of Medicine" could again be used and with strict academic accuracy and not merely by custom as during these 20 years. A "school" of a university is a well-known term; a "school" of a college is at least unfamiliar as a term. Old Leeds men are never tired of saying with justifiable pride that the first year of the new University would have been the twenty-first of the medical department of the Yorkshire College and that it is the seventy-fourth of the Leeds School of Medicine. The chair was occupied by Dr. J. B. Hellier and there were present 126 past and present students, including as guests the Vice-Chancellor, Dr. Bodington; the chairman of the Infirmary Board, Mr. Charles Lupton, who has taken such a keen interest in the welfare of the school and of the University as a whole; and representatives of the sister Universities of Manchester and Liverpool. Dr. Hellier proposed the toast of "The Past and Present Students" in a speech full of good sense and humour, and this was replied to by Mr. Coupland and Mr. Nicol. The toast of "The Staff," which was eloquently proposed by Mr. Reed, was appropriately responded to by Dr. E. F. Trevelyan, who has recently retired from the professorship of pathology, and by his successor, Professor A. S F. Grünbaum, who received a most cordial welcome from all present. In replying to the toast of "The Guests," the Vice-Chancellor referred especially to the very cordial relationship which had always existed between the three colleges of the Victoria University. The relationship between the three sister

[1] THE LANCET, July 21st, 1894, p. 158.

universities would, he felt sure, be no less cordial, for the discussions which led to the disruption had always been conducted with mutual good feeling. He cordially welcomed the suggestion of the students' inter-university conference for the publication of a students' song-book on the lines already in force in the Scottish universities.

National Physique.

In connexion with the question of national physique considerable interest attaches to some figures taken from the annual report of the Leeds recruiting depôt and published in the *Yorkshire Evening Post*. During the 12 months just ended, while 589 recruits have been accepted for line regiments and 762 for the militia no fewer than 40 per cent. of rejections are registered. During the last three months of 1904 34 candidates who had satisfied the preliminary tests as to stature, chest measurement, &c., were rejected on account of bad teeth, defective eyesight, cardiac mischief, flat foot, and varicose veins. It is stated that the number of rejections on account of bad teeth is considerably higher than in most other large towns. If this is the case it is earnestly to be hoped that the unenviable notoriety of Leeds in this respect may in some measure be lessened by the establishment of the new dental department at the Leeds Public Dispensary, the arrangements for which have for long been matter of careful consideration by the board and which, it is believed, will soon be in full working order.

A Jewish Nursing Home.

An offer was made some time ago by Mr. Alderman Moses of Bradford to contribute £4000 towards the establishment of a Jewish nursing home or hospital in Leeds. The offer was qualified by some conditions which it was thought might hamper its usefulness and it has not as yet been accepted. It is felt by the influential members of the Jewish community that the General Infirmary makes adequate provision for the treatment both of in-patients and of out-patients. Special arrangements were, with the ready consent of the board, made some time ago to meet their views as to the preparation and the cooking of their food and Jewish patients are as freely admitted as others. It is, however, perhaps natural that in a city with a Jewish population of some 15,000 to 20,000 a special effort should be made from among their own body or by their co-religionists in less necessitous districts to provide for the needs of those who are either not ill enough to require admission to the medical wards or are not suffering from affections requiring surgical operation but who, on the other hand, may require good food and skilled nursing in addition to the treatment which they could obtain in the out-patient department.

Jan. 10th.

WALES AND WESTERN COUNTIES NOTES

(FROM OUR OWN CORRESPONDENT.)

Bristol Ambulance Service.

THE ambulance service in Bristol is now very well organised. During the past year more than 3000 persons received first aid from the members of the Bristol City and Marine Ambulance Corps, a body of volunteers which was established in 1900. Since October, 1903, the corps has been in possession of a fully equipped ambulance wagon which is at the disposal of any injured person free of charge and at any time of the day or night. It is used on an average about five times daily. The corps has lately purchased a brougham ambulance which is frequently used by patients who are able to pay for the service.

Swansea Sewerage Scheme.

The corporation of Swansea has once more met with a rebuff in its attempt to secure the efficient drainage of the lower portion of the borough. The scheme proposed by the corporation included the construction of an outfall sewer at Brynmill and provided for a septic tank for the treatment of the sewage before being discharged into Swansea Bay. The Local Government Board had sanctioned the proposal but the consent of the Board of Trade, which is also necessary, has been withheld in consequence of the report of its commissioner who held an inquiry into the question in September last. The corporation scheme was not supported with any enthusiasm either by the medical officer of health (Mr. Ebenezer Davies) or by the borough engineer.

Death of Dr. William Williams Morgan.

Dr. William Williams Morgan, who died at Newport (Mon.) on Jan. 7th, was one of the oldest medical practitioners in this country. He was born in Merthyr Tydfil in 1809 and after studying at the old Webb-street School and Guy's Hospital he took the diplomas of M.R.C.S. Eng. and L.S.A. in 1835. In 1862 he obtained the degree of M.D. at the University of St. Andrews. With the exception of the few months immediately succeeding his becoming qualified, when he was house surgeon to the Bury Dispensary, he has lived and practised entirely in Newport. For many years he was a member of the town council and was mayor of the borough in 1864. He was the senior borough magistrate and a prominent Freemason, having been admitted into the order so long ago as 1835. He was active in the formation of the two Newport lodges Silurian and Isca, having been the first Master of the latter. It is of interest to note that Dr. Morgan's father lived to the age of 92 years and that he himself was neither a non-smoker nor a total abstainer.

The Unfounded Charge against Dr. Arthur D. Griffiths.

A vote of sympathy with Dr. Arthur D. Griffiths of Bridgend was passed at a joint meeting of the Cardiff Medical Society and the Cardiff division of the British Medical Association held at Cardiff on Jan. 4th. It was also decided at the same meeting to invite subscriptions towards the heavy legal expenses incurred by Dr. Griffiths in successfully refuting the charges brought against him by a female patient, details of which have already appeared in THE LANCET.[1] Dr. A. P. Fiddian, the treasurer of the Cardiff Medical Society, has undertaken to receive the subscriptions.

Ptomaine Poisoning.

During the last week in December, 1904, three children living in one household in Nailsworth, Gloucestershire, died from what has since been shown to be ptomaine poisoning. They were of the ages respectively of six months, two years, and four years, and were all taken ill on the night of Dec. 23rd, the prominent symptoms being vomiting and diarrhœa. The youngest child died on Dec. 25th, the one aged two years on Dec. 27th, and the eldest three days later.

West Wales Sanatorium.

The county councils of Cardigan, Carmarthen, and Pembroke have not yet made any proposals to support the sanatorium for consumptives which is about to be erected for the inhabitants of the three counties. The West Wales branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis is now suggesting that the councils shall undertake the cost of administration, the buildings being handed over by the branch free of debt. It is stated that the amount to be contributed by the councils would be equal to a rate of ¼d. in the pound.

The Working of the Midwives Act in Cardiff.

It is considered in many quarters that the principal difficulty in the administration of the Midwives Act will arise in those cases where a nurse is compelled to call in a medical practitioner, for the payment of whose fee no provision has been made by the Act. In order to arrive at some equitable arrangement in the matter a conference was held on Dec. 9th, 1904, between representatives of the Cardiff Medical Society, the Cardiff division of the British Medical Association, and the Cardiff branch of the Queen's Nurses' Institute. At this conference certain suggestions were agreed upon and with slight alterations they were adopted at a joint meeting of the members of the medical society and the division held at Cardiff on Jan. 4th. The proposals are that where the Queen's nurse attends a patient a medical practitioner shall be engaged in every instance when the total weekly income from all sources exceeds 25*s.* in the case of a primipara, a deduction of 1*s.* 6*d.* per child being made in calculating the wage limit in subsequent attendances; the fee of the nurse is to be 10*s.* Where the total weekly income is between 25*s.* and 21*s.* the nurse's fee is to be 10*s.* or 5*s.* where a medical practitioner is engaged; where the income is below 21*s.* a week the nurse's fee is to be 7*s.* 6*d.* or 5*s.* where a medical practitioner is engaged, the destitute poor to be attended by the nurses free of charge. The nurses will be instructed to do all in their power to get the medical fee paid and will advise patients to put money by

[1] THE LANCET, Dec. 17th, 1904, p. 1733.

for this purpose; they will also explain carefully to patients at the time of engagement that a medical practitioner must of necessity be called in under very many contingencies and that it will therefore probably be to their interest to engage one beforehand and thus get the benefit of his services all through their illness. Wherever the total weekly income is under 21*s.* the patient will be advised to procure an order beforehand from the Poor-law authority, if the patient is unwilling to engage a medical practitioner, which order can be used if required. In cases of emergency the nurses are instructed to summon in the first instance the family medical attendant; where there is no family attendant and the probability of payment of a fee is remote the Poor-law medical officer is to be sent for; while in all cases of urgent necessity the nearest medical practitioner is to be called in. The scheme outlined above is to be tried for two years and the two medical societies will appoint at their next meetings representatives to sit as assessors upon the maternity committee of the Queen's Nurses' Institute and to give the committee the benefit of their advice.

Jan. 9th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Visit of Professor G. Sims Woodhead to Belfast.

Professor G. Sims Woodhead of Cambridge visited Belfast last week on the invitation of the North of Ireland branch of the British Medical Temperance Association and gave three addresses. On Thursday afternoon in one of the large halls he delivered, by special request, the Lees-Rapper Lecture on Alcohol and Public Health. The Lord Mayor of Belfast (Sir Otto Jaffe) presided and there was a very large attendance. At the conclusion of the lecture Professor Woodhead was awarded a warm vote of thanks, proposed by Dr. Charles Kevin (president of the North of Ireland branch of the British Medical Temperance Association), and seconded by Professor J. W. Byers. In the evening, at the Ulster Medical Society, Professor Woodhead opened a discussion on the subject of Alcohol as a Protoplasmic Poison. In doing so he referred to the great interest that was now taken in the action of alcohol on the tissues both in disease and in health. In what he had to say he should try to be as moderate as possible and he might state at the outset that convinced as he was on many points there were many on which they would no doubt disagree. However, they were there to get at the root of the matter and not to agree except where they could do so with a good conscience. He first referred to the many experiments that had been carried out with various dilutions on animals of many species and on plants. He then gave a short account of the action of alcohol in different dilutions upon phosphorescent bacilli, taking this organism as a useful type; special stress was laid upon the fact that long before the bacillus was killed its functional activity as a light producer was interfered with. The results of these experiments could easily be recorded as the phosphorescence was sufficiently powerful to allow of photographs being obtained. This action of alcohol upon naked protoplasm had often been referred to as beside the mark, but they must remember that it had been maintained that alcohol was oxidised in the body and in the tissues and if it was oxidised there it must get there in however weak dilutions. The action of alcohol in the production of fatty infiltration and degeneration was then referred to and its action upon the heart, liver, and kidney, especially in so far as we had evidence of any interference with the metabolic oxidation associated with its presence in the tissues. He maintained that the heart was one of the organs on which alcohol exerted some of its most disastrous effects and he for one considered that the use of alcohol in heart cases was far more frequently contra-indicated than indicated and he quoted several authorities in support of his contention. He pointed out that although we had evidence of changes in the nerve cells which appeared to be the direct result of the action of alcohol on the nerve cells and their processes, we too often left out of account the fact that the lower tissues, connective and elastic, were in all probability affected at a much earlier stage than was generally accepted. What was seen in the liver and sometimes in the kidney on an extensive scale might be, and in all probability was, reproduced in a minor degree and perhaps more slowly in the delicate cells of endothelial and connective tissue type in walls of blood-vessels of various sizes. Some of these changes took the form of proliferation and connective tissue formation, usually associated with the degeneration and later calcification of the muscular coat. These changes were due in part to the presence of alcohol which interfered with both anabolism and katabolism, and in part to the storage of waste products which should under ordinary conditions be got rid of. Professor Woodhead then referred to the experiments made on the production of immunity against rabies, tetanus, and anthrax and on the action of the diphtheria bacillus and its poison and the tubercle bacillus upon alcoholised and non-alcoholised animals. He spoke of the action of alcohol as a "retarder" in the process of the production of a condition of immunity or insusceptibility and maintained that any substance that exerted such extraordinary effects should be used with the greatest care and only with the object of obtaining certain definite effects and after a careful balancing of the profit and loss accounts. In the discussion which followed Professor Byers, Professor J. A. Lindsay, Dr. Kevin, Professor T. H. Milroy, Dr. J. Campbell, Dr. A. G. Robb, Mr. A. B. Mitchell, and the President (Dr. W. Calwell) took part. After Professor Woodhead had replied a special vote of thanks was accorded to him on the motion of Professor J. Symington, F.R.S., seconded by Dr. Campbell. On the evening of Friday, Jan. 6th, Professor Woodhead delivered a very interesting address on the Reasons why he was an Abstainer from Alcohol in the Students' Union, Queen's College, Belfast, before the Belfast Medical Students' Association. Dr. J. Lowry, the President, occupied the chair and there was a very large attendance. At the conclusion of the address Professor Milroy proposed, and Professor J. Park, M.A., D.Litt., seconded, a vote of thanks to Professor Woodhead, which was cordially supported by the Lord Mayor of Belfast. Professor Woodhead's visit to Belfast has been a marked success. His extreme fairness in putting forward his views, his evident sincerity, his scientific method of dealing with the questions which he discussed before audiences with very diverse opinions on the subject, and above all his total absence of dogmatism, charmed everyone with whom he was brought in contact, whether they accepted his conclusions or not.

Jan. 10th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Fractures of the Humerus treated with the Heitz-Boyer Apparatus.

AT the meeting of the Society of Surgery held on Dec. 8th, 1904, M. Schwartz showed two patients who had suffered from fracture of the humerus and who had been treated with the best result by the application of the Heitz-Boyer apparatus. One patient had had a T-shaped fracture of the lower end of the humerus extending into the joint and the other a fracture of the upper end of the bone with considerable over-riding of the lower fragment. In both cases Hennequin's apparatus, although applied immediately after the injury, had only brought about partial reduction, as was evident by x ray photographs. The application of the Heitz-Boyer apparatus, however, brought about perfect reduction and the bone united in excellent position. The functional use of the limb was perfectly restored in both patients. M. Quénu and M. Broca both gave evidence as to the admirable results which they had obtained with the apparatus in question. M. Lucas-Championnière, however, said that perfect reduction was by no means a *sine quâ non* for the obtaining of future good functional results. For himself he would undertake to bring forward plenty of patients, both children and adults, in whom simple massage unaccompanied by the use of any apparatus had brought about just as good results as in the patients alluded to by M. Schwartz and M. Quénu.

Graefe's Coin-catcher and Foreign Bodies in the Œsophagus.

At the meeting of the Society of Surgery held on Dec. 21st M. Sebileau showed the œsophagus of a child, aged two and a half years, which exhibited two perforations caused by attempts to extract a sou by means of Graefe's coin-catcher (*panier*). On account of this misfortune a discussion arose as to the advisability of giving up the use

of the coin-catcher. M. Féliziet did not think that it should be given up but that it was necessary for the operator to be well acquainted with the instrument. He used a sponge mounted on a handle at the same time as the catcher. The sponge dilated the œsophagus and the catcher brought up the foreign body. M. Broca was of the same opinion. He thought that the catcher was an excellent instrument but it should not be employed except for coins. M. Kirmisson said that he considered it preferable to employ a hook in place of the catcher and the hook had given excellent results in his hands and in those of M. Faure. M. Jalaguier sometimes used the catcher and sometimes the hook. Occasionally neither instrument succeeded and when the coin lay near the cardiac end of the œsophagus, as was the case in a child, aged seven years, who had swallowed a sou, and who was under the care of M. Segond, a gastrotomy should be performed. At the following meeting of the society M. Kirmisson reverted to the subject and uttered a protest against the ideas of certain surgeons who argued that they had (in cases of extraction of coins through the mouth) obtained equally good results whatever the instrument they used. His own opinion was that the hook, especially in very young children, had one enormous advantage over the catcher in that its diameter was at least half that of the catcher and this permitted it to pass easily in cases where the catcher containing the coin was likely to engage in the walls of the œsophagus with fatal results.

A Matter of Public Health.

The Council of Hygiene of the Seine has approved an order of the Prefect of Police forbidding the throwing on the pavement of sweetmeats and other comfits in view of the danger to the health of children who may eat such comfits. They are found scattered on the pavement after certain family parties (*cérémonies de famille*). These sugarplums are naturally always soiled by mud or dust and so they are quite capable of serving as vehicles for the germs of transmissible diseases, more especially those of tubercle. The circular of regulations sent out to police commissaries and *officiers de paix* instructs them to deliver a verbal summons to any offender who shall contravene the Prefect's order.

The Escape of Milk by the Ear in a Child suffering from Congenital Deficiency of the Soft Palate.

At the meeting of the Society of Pediatrics held on Dec. 20th, 1904, M. Variot showed a female child, aged three months, suffering from cleft of the soft palate. Nevertheless the child, despite the fact that milk regurgitated from time to time through the nose, was able to take nourishment in a satisfactory manner, but a fortnight before the child was exhibited the mother noticed that whenever she nursed the child a certain quantity of milk escaped through the right ear. On examination there was found to be complete perforation of the right tympanic membrane and M. Le Marc-Hadour, who made an otoscopic examination, thought that the perforation had followed an otitis and was not due to any congenital malformation of the tympanum.

Jan. 10th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Chloride of Sodium and Dropsy.

THE effects of removing chloride of sodium from the diet, to the importance of which in pathological conditions associated with anasarca, &c., attention has been called by Widal and others, have lately been tested by several Italian clinicians. Massalonga and Zambelli, in a communication read before the recent Congress of Internal Medicine confirm what these authors state—namely, that the retention of chloride of sodium has a preponderating share in the genesis of œdema, although it does not always stand in any definite relation to the œdema itself. The most important of the effects produced by it is upon nephritic subjects in whom a few grammes of salt suffice to provoke or to augment œdema, whilst the removal of it from the diet causes the œdema to diminish or to disappear altogether. A suitable diet poor in chloride of sodium was enough in almost every case to better the general condition of the patient, to reduce albuminuria and to stimulate diuresis. But also in dropsy of cardiac origin a salt-free diet is very often of itself sufficient to diminish the œdema, re-establishing the function of the heart and facilitating the action of cardiac tonics where these had not previously proved effectual. Considerable improvement in the grave state of a patient may thus be brought about. In like manner the ascites of hepatic cirrhosis may be reduced with or without diuretics by the same means and even in tuberculous effusions into the peritoneal cavity and sero-fibrinous exudations of the pleura it sometimes, though less frequently, proves of signal service, especially where no fever is present. Cioffi has obtained similar results but enjoins care in prolonging beyond a certain point the salt-free diet as liable to cause grave changes in the kidneys. Experimenting on healthy guinea-pigs he found that after only 24 hours of salt-free diet there appeared in the urine albumin and tube casts in great numbers and that these immediately disappeared when ordinary diet was resumed. On the other hand, by injecting into the veins a small amount of salt solution he was also able to produce a similar result, thus proving that an excess of salt has the same injurious effect as the withdrawal of it, the convoluted tubules in both cases showing almost identical alterations.

The Improvement in the Sanitary Condition of Italy.

The following table is compiled from the "Annuario di Statistica" for 1904 and shows the number of deaths which took place in Italy from infectious diseases in each year from 1887 to 1902 inclusive, only those infectious diseases, however, being selected the notification of which is compulsory—viz., small-pox and varioloid, measles, scarlet fever, diphtheria and croup, typhus and typhoid fevers, puerperal fever, pulmonary tuberculosis, malaria, syphilis, rabies, and malignant pustule:—

Year.	Deaths.	Rate per 1000 inhabitants.	General death-rate per 1000.
1887	170,628	5·78	27·99
1888	152,088	5·12	27·51
1889	129,918	4·34	25·57
1890	116,399	3·86	26·32
1891	119,140	3·92	26·11
1892	105,096	3·44	26·18
1893	105,160	3·42	25·16
1894	96,865	3·33	24·98
1895	97,920	3·14	25·05
1896	93,977	2·99	24·06
1897	82,422	2·61	21·93
1898	81,455	2·56	22·94
1899	84,077	2·62	21·89
1900	90,280	2·80	23·77
1901	80,477	2·48	21·95
1902	76,071	2·32	22·15

In 1902 there were thus 94,557 fewer deaths from that class of disease than in 1887, and reckoning the morbidity at 100 patients for every 12 deaths there would be nearly 800,000 fewer patients ill in the former year than in the latter. If 30 days be allowed for an average illness and convalescence, and 1*s.* 8*d.* per day for the cost of living, then a saving will have been effected during 1902 as compared with 1887 of nearly £2,000,000, in addition to the amount represented by the 94,557 persons who have presumably been rescued from death. The economic value alone of this reduction in the amount of illness and mortality from infectious diseases in Italy is therefore very high. During these years the population, which in 1887 was 29,510,284, increased to 32,704,166 in 1902, whilst, as will be seen from the table, the death-rate per 1000 inhabitants diminished during the same period from 27·99 to 22·15.

Medical Men in the Italian Chamber of Deputies.

In the Parliament which was recently elected and is now sitting there are 22 medical deputies, representing wards in 18 provinces of Italy. The list includes several well-known names, such as Baccelli and Santini (for Rome), Celli (for Cagli), Sanarelli (for Bibbieno), and Rummo (for Benevento).

all but three (Colajanni, Pantano, and Santini) are men in active practice or who occupy university chairs.

Jan. 7th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Health Cruises.

It will be of interest to some readers of THE LANCET to know that the Hamburg-America Steamship Company, which is one of the most important companies of its kind, is about to make arrangements which will be appreciated by many of those who go on sea voyages for the benefit of their health. The new steamer, *Fürst Bismarck*, which is to be launched in April, will in some respects be fitted up as a floating sanatorium with every requisite for convalescents and patients who in the opinion of their medical attendants require sea air. Cases of infectious disease will be strictly excluded. The first trip will be made in the month of May to the Mediterranean. A competent medical staff under Professor Schweninger as chief physician will be on board.

The Information Bureau at the University of Berlin.

An information bureau (Academische Auskunftsstelle) has just been opened in Berlin in connexion with the University and will undertake the same kind of work as that of the Bureau de Renseignement which was inaugurated in Paris two years ago. It will supply information concerning study at Berlin and will assist students, especially foreigners, during their stay in the city. Information will also be given to graduates who wish to visit Berlin for scientific purposes. The office is in the University buildings and will be open daily, Sundays excepted, from 10 A.M. to 1.30 P.M. and from 6.30 to 7.30 P.M. During the University vacation the office will not be open in the afternoon. Letters of inquiry will also be replied to.

Jan. 9th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Vital Statistics of St. John, New Brunswick.

THERE were 751 deaths in St. John, New Brunswick, during the year ending Oct. 31st, 1904, as compared with 777 in the previous year. Tuberculosis was responsible for 108 of the number, as against 89 cases in 1903. Of the total number who died 376 were males and 375 were females; 365 were single and 386 were married. The number of deaths at some periods of age was as follows: under one year, 133; from 70 to 80 years, 96; from 60 to 70 years, 90; from 50 to 60 years, 69; from 40 to 50 years, 56; and from 30 to 40 years, 46. The report of contagious diseases for the year numbered 246 cases, the details being as follows: diphtheria, 100 cases with 11 deaths; scarlet fever, 58 cases with two deaths; measles, 67 cases with one death; typhoid fever, 20 cases with six deaths; and small-pox, one case, with no mortality.

Vaccination in Montreal.

The medical health officer of Montreal in his report states that of all of the cases of small-pox occurring in that city in 1903 not even one person suffered from the disease who had been vaccinated during the past five years. One year ago, when the official vaccinators were visiting all the schools in order to vaccinate unvaccinated children, over 1000 refused to attend school because they had to submit to vaccination. This year there is scarcely any opposition. On Jan. 1st, 1903, there were five patients in the Montreal Small-pox Hospital and 90 cases were admitted during the year. The deaths numbered two and one remained in the hospital at the end of the year. The males included 41 adults and 11 minors; the females included 26 adults and 12 minors. As already stated, there were no cases which had been vaccinated within the past five years but there were 13 cases which had been vaccinated some years ago and there were 77 cases unvaccinated.

By-laws against Spitting in Montreal.

With a view to prevent the dissemination of tubercle bacilli the city council of Montreal has decided to pass the following by-law prohibiting spitting in public places: "No person shall spit upon the floor of any railway car, street car, or other public conveyance, or upon the floor of any theatre, public building, church, opera house, music hall, or hall used for public meetings, railway or steamboat stations, or waiting-rooms, or other public hall, building, room, or place, or upon any platform surrounding, in front of, or in the immediate vicinity of any such place, or upon any side walk or any covered way within the limits of the city of Montreal."

Alexandra Hospital, Montreal.

The delay in the construction of the Alexandra Hospital for Contagious Diseases, Montreal, was the subject of a conference recently between the directors of the institution and the civic hygienic committee. The conference was brought about owing to the prevalence of diphtheria in the city and to the fact that the directors of the hospital had undertaken that accommodation should be available on Jan. 1st, 1905. The delay has been occasioned by the legislature prohibiting the hospital authorities from building on the site selected. Another site was procured at a cost of $90,000; but then the directors thought it wise to proceed cautiously until they had sufficient funds in hand. They have now $40,000 and the hospital will be proceeded with at once and by September next will be ready for the accommodation of patients. Montreal had 87 cases of diphtheria during last November.

Toronto, Jan. 2nd.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The New York Society of Medical Jurisprudence discards the Title of Doctor.

THE New York Society of Medical Jurisprudence held its 149th annual meeting at the New York Academy of Medicine on Dec. 12th, 1904. A motion was proposed and carried unanimously that in all literature of the society the title of "physician" should henceforth be employed instead of "doctor." There can be no doubt that the title "doctor" is used far too indiscriminately in the United States and the move on the part of the Society of Medical Jurisprudence is wholly justified by the facts of the case.

Dietary in Bellevue Hospital, New York.

The feeding of the patients in the majority of hospitals is not altogether satisfactory. The diet at Bellevue Hospital, New York, has for some time been subjected to adverse criticism and it has recently been decided to make a change in this respect. A new kitchen system has been installed and is under the direction of a qualified and scientific cook, assisted by a competent staff. Special dietaries have been introduced for special diseases and in every way, so far as dieting is concerned, the interests of the patients will be the first consideration.

Proportion of the Sexes in the United States.

The United States Census Bureau has just made public a study and analysis of the proportion of the sexes in the United States compiled by Professor W. F. Willcox of Cornell University and based upon the figures of the twelfth census. From these figures the fact is gathered that in the United States there are 1,638,321 more males than females, but the proportionate excess of males is less at present than it appeared in the previous census. Professor Willcox says: "The divisions of the United States with the smallest proportion of males are the District of Columbia (47·4 per cent.), Massachusetts (48·7 per cent.), and Rhode Island (49·1 per cent.); those with the largest are Wyoming (62·9 per cent.) and Montana (61·6 per cent.)..... American cities as a rule have more females than males. In the 1861 cities, each having in 1900 at least 2500 inhabitants, there were 201,959 more females than males. ..... In all races and in all parts of the United States there has been a decided increase since 1890 in the proportion of females attending school. ..... The death-rate of males in the registration area of the United States in 1900 was 19 per 1000 and that of females 16·6 per 1000, the former having a death-rate higher by about one-seventh than the latter. In

the 346 registration cities of the United States the death-rate of males was 20·0 and that of females 17·2 per 1000, the male-rate exceeding the female by one-sixth."

Meeting of the American Association for the Advancement of Science.

The fifty-fourth Convocation of the American Association for the Advancement of Science met in Philadelphia on Dec. 27th. All the sessions were held in the buildings of the University of Pennsylvania. Professor Carroll D. Wright retired from the presidency of the association and was succeeded by Professor W. G. Farlow of Harvard. The newly elected vice-presidents are: Professor Alexander Ziwet, University of Michigan; Professor W. F. Magie, Princeton; Professor L. P. Kinnicutt, Worcester Polytechnic Institute; Professor D. S. Jacobus, Stevens Institute; Professor Eugene A. Smith, University of Alabama; Professor C. Hart Merriam, Department of Agriculture, Washington; Professor B. L. Robinson, Harvard; Dr. Walter Hough, National Museum, Washington; Professor M. A. Knapp, chairman of the Inter-State Commerce Commission; and Professor H. P. Bowditch, Harvard. Among papers of interest read at the meeting was one by Dr. Spitzka of Columbia University on different types of the brain. Dr. Spitzka said that judging from the present indications of the formation of the brain in the members of an American family of the Aryan race, the conditions governing the population of the United States seem to have been peculiarly advantageous to the preservation and restoration of the best types, characterised by greater energy, motility, and culture. We may, therefore, thinks Dr. Spitzka, expect to find bigger and better brains in America eventually. Referring to the brains of criminals he ridiculed the idea that the criminal brain was of a decidedly different type from that of an ordinary individual. Many criminals, he said, show not a single anomaly in their physical or mental conformation, while many persons with marked evidences of morphological aberration have never exhibited a criminal tendency. The retiring vice-president of the Chemical Section, Dr. Wilder S. Bancroft, in his address made some remarks on the possibility of the transmutation of elements. He said that the fact that transmutation of the elements has never been observed does not prove that none has taken place. If Lockyer's conclusions as to the state of things in the sun were accepted many of the elements could undoubtedly be broken up if they could be exposed long enough to 6000° Centigrade.

Jan. 4th.

Obituary.

WILLIAM TURNER, M.R.C.S. ENG., L.S.A.

THE recent death of Mr. William Turner of Poole, Dorset, sadly illustrates some of the risks of medical practice. The deceased who was in his sixtieth year, while performing an operation at the Cornelia Hospital, Poole, on Oct. 25th, pricked the first finger of his left hand with the needle which he was using. The finger was immediately washed with an antiseptic solution, but to no purpose, as a medical friend was asked to see him on Oct. 27th on account of the painful state of the finger and arm and the illness continued with various exacerbations and remissions until it terminated fatally on Nov. 25th. At an inquest which was held on Nov. 27th the verdict was to the effect that death was due to blood poisoning and much sympathy for the family was expressed by both the coroner and the jury. Mr. Turner's professional education was received at Guy's Hospital and in 1867 he became qualified as M.R.C.S. Eng. and L.S.A. Soon afterwards he settled in Poole and eventually acquired the practice of the late Mr. Lacey of that town. In 1886 he was appointed a borough magistrate. Among various local positions which he held may be mentioned that of medical officer and public vaccinator of the first district and the workhouse of the Poole union, medical officer of the industrial school, and honorary surgeon of the Cornelia Hospital. He also acted as deputy coroner a few years ago. Mr. Turner took a great interest in Freemasonry. He was a Past Master of the Amity Lodge No. 137 and had held high office in the Provincial Grand Lodge of Dorsetshire. He was also a prominent figure in yachting circles and in former years his yacht gained several prizes; at the time of his death he was chairman of the sailing committee of the Yacht Club and was last year elected chairman of the regatta committee. For several years he was president of the Poole Natural History Club and was also associated with the Dorset Field Club. He has left a widow and a family consisting of five daughters and three sons. The funeral took place on Nov. 29th in Poole Cemetery.

THOMAS MORLEY ROOKE, M.D. LOND.

THE death occurred recently at Bournemouth of Dr. Thomas Morley Rooke. He had been much indisposed for some time and succumbed 24 hours after an operation which was undertaken in order if possible to save his life. Born at York in 1826 he entered as a student at Guy's Hospital, where his remarkable diligence was speedily recognised, and at the University of London, where he graduated as M.B. in 1852, carrying off the "blue riband" of the medical examination world by gaining the gold medal in medicine and the University scholarship. He took the degree of M.D. a year later. Always a hard worker, without adequate holiday, he started practice in London, but indifferent health, followed by hæmorrhage from the lungs, made it advisable for him to take a long sea voyage. After a year's rest he returned quite well and proved himself by his subsequent long life a good example of permanent recovery from a tuberculous lesion. He then commenced practice at Scarborough but an unfortunate *contretemps* made him beat a hasty retreat from this place where there was then thriving a certain "Dr. Rooke," proprietor of much-advertised quack nostrums and editor of a pamphlet called the "Anti-Lancet." The confusion entailed by the presence of two "Dr. Rookes" caused Dr. Morley Rooke so much annoyance that he was glad to exchange for another sphere and he chose Cheltenham. All his life, however, "Dr. Rooke's Anti-Lancet" was a never-failing source of joking with him. He spent 37 years in practice at Cheltenham where he held the office of President of the Gloucestershire branch of the British Medical Association and was consulting physician to the Cobourg Dispensary for Diseases of Women and Children and physician to the Derbyshire General Infirmary. He always kept himself abreast of the times in medical and scientific matters but it was as the best type of family physician that his memory will long be revered in Cheltenham. Though with a constitution never very robust his thoughts were always concentrated on his patients. Ten years ago the state of his health made him relinquish his practice and retire to Bournemouth, where he resided until his death. There he devoted his time and energy in relieving the sufferings of the poor and acted for a time as honorary secretary to the Charity Organisation Society. He was the type of the upright Christian man who delighted in doing good works not for his own soul's sake but for the good and pleasure that it gave to others. As a medical man in Bournemouth writes: "In these latter days his profession can ill spare one whose bearing so well represented the best type of a courtly English gentleman."

ALEXANDER LOCKHART GILLESPIE, M.D. EDIN., F.R.C.P. EDIN., F.R.S. EDIN.

BY the death of Dr. Alexander Lockhart Gillespie Edinburgh has lost one of its younger physicians and one of whom much might have been expected. He died suddenly from heart failure on Dec. 25th, 1904. He was a graduate in medicine of Edinburgh of 1888 and took the doctorate of medicine in 1892, receiving a gold medal for his thesis. In the same year he became a Fellow of the Royal College of Physicians of Edinburgh. He was a member of numerous medical and scientific societies. He came of a medical family, both his father and grandfather having been prominent men in their day. He was himself a man of great ability, of remarkable power of work, and of marked versatility. He was the author of a book on "The Natural History of Digestion" and of another on "Modern Gastric Methods." He had contributed many articles to medical societies and to the medical press. In the estimation of his brethren in Edinburgh he held a foremost place amongst the medical song writers of the younger generation. At the

time of his death he held the post of medical registrar at the Edinburgh Royal Infirmary. His wife predeceased him and he has left three children.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced: Dr. Alexander Bobroff, professor of surgery in the University of Moscow. He was the author of various surgical works.—Professor Nicolas Sklifosovski, surgeon to the Military Medical Academy in St. Petersburg, who was president of the Organising Committee of the International Congress of Medicine at Moscow.—Dr. P. Q. Brondegeest, lecturer in pharmacology in the University of Utrecht.—Dr. Lecorché, formerly medical officer to the Paris hospitals.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON. — At the primary examination held recently the following candidates passed in the subjects indicated:—

PART I.

Biology.—A. J. V. Matthews, St. Mary's Hospital; V. P. Norman, London Hospital; H. R. Smith, Royal Free Hospital; and J. B. Tackaberry, Middlesex Hospital.
Chemistry.—R. C. R. Fisher, Royal Free Hospital; and J. B. Tackaberry, Middlesex Hospital.
Materia Medica and Pharmacy.—S. F. H. Everill, Birmingham.

PART II.

Anatomy.—R. Beesley, Manchester; T. B. Braim, Leeds; M. L. Ford, London Hospital; J. G. Lewis, King's College Hospital; C. C. Morrell, London Hospital; M. Rathbone, Royal Free Hospital; L. D. Stamp, Guy's Hospital; and H. Stanger, Leeds.
Physiology.—M. L. Ford and C. C. Morrell, London Hospital; M. Rathbone, Royal Free Hospital; L. D. Stamp, Guy's Hospital; and H. Stanger and E. F. Waddington, Leeds.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Erich Abderhalden has been recognised as *privat-docent* of Physiological Chemistry and Dr. Helbron as *privat-docent* of Ophthalmology.—*Bonn:* Dr. Otto Burchardt has been recognised as *privat-docent* of Laryngology and Otology.—*Breslau:* Dr. Paul Jansen, *privat-docent* of Physiology, has been granted the title of Professor.—*Giessen:* Dr. Johann Mönckenberg has been recognised as *privat-docent* of General Pathology and Pathological Anatomy.—*Jena:* Dr. Heinrich Jakobsthal has been recognised as *privat-docent* of Surgery.—*Kazan:* Dr. N. Guerken has been promoted to the Professorship of External Pathology. Dr. Levchatkin has been recognised as *privat-docent* of Psychiatry.—*Kiel:* Dr. Karl Holzapfel, *privat-docent* of Gynæcology, has been granted the title of Professor.—*Marburg:* Dr. O. Loewi, Director of the Pharmacological Institute, has been granted the title of Professor; Dr. A. Riedländer, First Assistant in the University Gynæcological Clinic, has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Naples:* Dr. Giovanni Galli has been recognised as *privat-docent* of Internal Pathology.—*Pavia:* Dr. Maurizio Ascoli has been recognised as *privat-docent* of Internal Pathology.—*Prague (German University):* Dr. Theodor Petrina, *privat-docent* of Medicine, and Dr. Enoch H. Kisch, *privat-docent* of Balneology, have been promoted to Extraordinary Professorships; Dr. Alfred Kohn has been appointed Extraordinary Professor of Histology.—*St. Petersburg (Military Medico-Chirurgical Academy):* Dr. Chnqovets has been recognised as *privat-docent* of Physiology.—*Vienna:* Dr. Johann Fein has been recognised as *privat-docent* of Laryngology and Rhinology.—*Zürich:* Dr. Oskar Wild has been recognised as *privat-docent* of Laryngology and Rhinology.

UNIVERSITY OF CAMBRIDGE.—The examiners in State Medicine for the ensuing year are Mr. Purvis, St. John's, Dr. G. H. F. Nuttall, Christ's, Dr. J. F. W. Tatham, Dr. J. Lane Notter, and Dr. R. D. Sweeting.—The examiners in Tropical Medicine and Hygiene are Dr. Nuttall, Sir Patrick Manson, and Professor Ronald Ross.—Mr. R. P. Gregory, demonstrator of botany, has been elected to a Fellowship at St. John's College.—Mr. A. E. Shipley, F.R.S., Christ's, has been elected a member of the Council of the Senate.—Mr. J. C. Willis, Caius, director of the Botanic Gardens, Peradeniya, has been approved for the degree of Doctor of Science.

ROYAL CORNWALL INFIRMARY. — Sir Robert Harvey of Trenowth, Cornwall, has given £1000 to the Royal Cornwall Infirmary, Truro, for the purpose of endowing a bed as a memorial to his wife, the late Lady Harvey.

ADVANCED LECTURES ON PHYSIOLOGY AT UNIVERSITY COLLEGE, LONDON.—A course of ten lectures on Enzymes will be given by Mr. W. M. Bayliss, F.R.S., in the Physiological Theatre, University College, London, on Wednesdays, at 5 P.M., commencing on Wednesday next, Jan. 18th. This course is a continuation of that given in 1904 and in it a selection of typical enzymes, such as invertase, lactase, pepsin, trypsin, lipase, and oxydase, will be discussed. These lectures are open to all internal students of the University of London and also to medical practitioners on presentation of their cards.

METROPOLITAN HOSPITAL SUNDAY FUND.—A meeting of the council was held at the Mansion House on Tuesday, Jan. 10th, the Lord Mayor being in the chair. The committee for general purposes, consisting of the President, Vice-President, and 19 members, was reappointed. In the committee of distribution there were two vacancies, Mr. Herman Hoskier having died and Captain Cundy having retired. In their places the council elected Mr. Felix Schuster and Mr. George Herring, who has during the last five years contributed £65,000 to the Fund. Mr. R. B. Martin, M.P., and Mr. John S. Gilliat were reappointed honorary secretaries, Mr. Charles Chester, honorary solicitor, and Messrs. W. H. Pannell and Co., honorary auditors.

LITERARY INTELLIGENCE.—Messrs. Longmans and Co. have in the press a collection of papers communicated to the Academy of Sciences, Paris, by Professor R. Blondlot on the subject of the "n" rays, which is also the title of the book. The work, which contains additional notes and instructions for the construction of phosphorescent screens, has been translated into English by M. J. Garcin and the translation has been revised by Professor A. W. Reinold. It is announced that many of Professor Blondlot's observations are of a simple character and may be repeated without special apparatus and that a small phosphorescent screen, suitable for repeating some of the experiments, is attached to the book. This work should be of great interest as the existence of the "n" rays has been denied by a large number of scientific men in this country and on the continent and in the October and November numbers of the *Revue Scientifique* this difference of opinion has been expressed and Professor Blondlot himself has taken a part in the controversy. An interesting synopsis of the situation revealed by the *Revue Scientifique* appeared in the *Literary Digest* published in New York on Dec. 17th, 1904.—Messrs. Skeffington will shortly publish a book by Mr. Norman Porritt, M.R.C.S. Eng., L.R.C.P. Lond., consulting surgeon to the Huddersfield Infirmary, entitled "Religion and Health; their Mutual Relationship and Influence."

DONATIONS AND BEQUESTS.—By the will of Mr. S. Charrington, M.P., £500 are bequeathed to the East London Hospital for Children and £500 to the Victoria Park Hospital for Children and £500 yearly for three years to the London Hospital.—Under the will of Mr. Edwin Hunt the West Bromwich Hospital receives £500 and the Guest Hospital at Dudley a like sum.—Dr. Bentham Casaubon Chandler has bequeathed £300 to the National Hospital for the Paralysed and Epileptic and £300 to the Home for Incurables, Clapham.—By the will of Mrs. Ann Jameson £300 will be equally divided among the Monkwearmouth and Southwick Hospital, the Sunderland and Durham County Blind Institution, and the Sunderland Nursing Institution. Subject to certain legacies the residue of her property, which has been valued at £4575 2*s.* 4*d.* gross, and £3377 12*s.* 7*d.* net, is left in trust as to two-thirds for the Sunderland Royal Infirmary and one-third for the Sunderland Eye Infirmary.—Mr. John Wishart Lyell has bequeathed £1500 to the Middlesex Hospital, to be invested permanently and the income paid annually to the Lyell gold medalist, or, in the event of the scholarship passing for a year, the income is to be applied for the general purposes of the hospital.—The Rev. A. Watson has bequeathed £250 to the Radcliffe Infirmary at Oxford; £200 to the Royal Free

Hospital, Gray's-inn-road; £150 to the Kidderminster Infirmary and Children's Hospital; £100 to the Hospital for Sick Children, Great Ormond-street; and £50 to the Wimbledon Cottage Hospital.—Mrs. Emma Elizabeth Temple has under her will bequeathed £2000 to Charing Cross Hospital and like sums to the West London Hospital, Hammersmith, to St. George's Hospital, and to King's College Hospital.

SUPERANNUATION ALLOWANCE.—At a meeting of the Helston (Cornwall) board of guardians held on Dec. 31st, 1904, it was unanimously resolved to grant a superannuation allowance of £33 per annum to Mr. W. Wearne, who had recently resigned his appointment of district medical officer after 33 years' service.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—The committee of this hospital has decided to limit to 65 the number of new cases which can be seen in the out-patient department on any one day. This reform, which is taking effect from Jan. 2nd, has been made in response to representations from the medical staff, who pointed out that on certain days it was no uncommon thing for as many as 40, 50, or 60 new cases to be referred for treatment to a single member of the staff and that in such circumstances it was impossible to give proper attention to each case. The necessity for the new regulation has arisen, we are informed, not so much from the excessive number of out-patients applying for treatment in the 12 months as from the fact that the large majority present themselves on Mondays and Tuesdays, thereby crowding the out-patient department and making satisfactory work impossible on those days. The object aimed at is not the diminution of the number of out-patients as a whole but their more even distribution over the week. Patients coming with a recommendation from a medical man will always be seen, notwithstanding the new regulation, while care will also be taken that no hardship is inflicted on patients coming from a considerable distance.

UNIVERSITY OF LEEDS.—The time tables for the March and July examinations in the Faculty of Medicine have been issued. Written examinations begin on March 20th and July 10th and the practical and oral examinations in the case of each follow on the written one. The following appointments to external examinerships have been made by the council:—Medicine: G. Newton Pitt, M.D. Cantab., F.R.C.P. Lond., lecturer on pathology, Guy's Hospital. Surgery: Albert Carless, M.B., M.S. Lond., F.R.C.S. Eng., professor of surgery at King's College, London. Pathology: William Bulloch, M.D. Aberd., lecturer on pathology at London Hospital. Midwifery and Gynæcology: Peter Horrocks, M.D. Lond., F.R.C.P. Lond., obstetric physician to Guy's Hospital. Mental Diseases: G. Newton Pitt, M.D. Cantab., F.R.C.P. Lond. Medical Jurisprudence: Sir Thomas Stevenson, M.D. Lond., F.R.C.P. Lond., senior scientific analyst to the Home Office. Public Health: J. Lane Notter, M.D. Dub., late professor of military hygiene, Netley. Materia Medica: Francis Warner, M.D. Lond., F.R.C.P. Lond., F.R.C.S. Eng., lecturer in the London Hospital Medical College. Anatomy: George Dancer Thane, M.R.C.S. Eng., professor of anatomy at University College, London. Physiology: J. S. Edkins, M.B. Cantab., lecturer on physiology at St. Bartholomew's Hospital. These appointments have been made in accordance with the following regulation—viz., external examiners are appointed at first for one year only but they are eligible for re-election for a further period of two years. They are recommended by the Senate for election by the council in any case in which the board of the faculty concerned shall present a recommendation passed by the board *nemine contradicente* in favour of the appointment of a particular examiner, but in other cases after an advertisement for such examiner shall have appeared in selected newspapers. To meet the immediate requirements of the pathological department a sum of £294 has been placed by the council at the disposal of Professor A. S. F. Grünbaum.

BOOKS, ETC., RECEIVED.

AMERICAN CLIMATOLOGICAL ASSOCIATION (Secretary: Dr. Guy Hinsdale, Hot Springs, Va., U.S.A.).
Transactions of the American Climatological Association for the year 1904. Volume XX. Price not stated.

ASSOCIATION OF AMERICAN PHYSICIANS (Secretary: Dr. Henry Hun, 149, Washington-avenue, Albany, N.Y., U.S.A.).
Transactions of the Association of American Physicians. Nineteenth Session, held at Washington, D.C., May 10th and 11th, 1904. Volume XIX. Price not stated.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent Garden, W.C.
A Manual of Toxicology. By Albert H. Brundage, A.M., M.D., Phar.D., Professor of Toxicology and Physiology in the Rhode Island College of Pharmacy and Allied Sciences. Fourth edition, revised and profusely illustrated. Price 8s. 6d. net.

BROWNE, T. B., LIMITED, 163, Queen Victoria-street, E.C.
The Advertiser's A B C: The Standard Advertisement Press Directory. 1905 Edition. Price 10s. 6d.

CLAY, C. J., AND SONS, Ave Maria-lane, E.C.
The Harveian Oration delivered before the Royal College of Physicians on June 21st, 1904: I., I-em-hotep and Ancient Egyptian Medicine; II., Prevention of Valvular Disease. By Richard Caton, M.D., F.R.C.P., Emeritus Professor of Physiology, University of Liverpool; Consulting Physician, Royal Infirmary. Price not stated.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.
Grundsätze für den Bau von Krankenhäusern. Von Generalarzt Dr. Thel, Korpsarzt des XI. Armeekorps. (Bibliothek v. Coler, Band 20.) Price M.6.

KIMPTON, HENRY, 13, Furnival-street, Holborn, E.C.
Materia Medica of Vegetable and Animal Origin. With Notes on the Properties, Uses, and Constituents of Crude Drugs. By John Humphrey. With an Introduction by E. M. Holmes, F.L.S. (Kimpton's Pocket Text-book Series.) Price 5s. net.

KNIGHT, W. J., 147 and 149, High-street, Ventnor, (HENRY FROWDE, London.)
The Life and Times of St. Boniface. By James M. Williamson, M.D. Price 5s. net.

LAURIE, T. WERNER, Clifford's Inn, Fleet-street, E.C.
Robert Louis Stevenson: A Record, an Estimate, and a Memorial. By Alexander H. Japp, LL.D., F.R.S.E., Author of "Thoreau: his Life and Aims," &c. With Hitherto unpublished Letters from R. L. Stevenson in Facsimile. Price 6s. net.

OFFICE OF "APOLLO'S" MAGAZINE, 1, Vine-street, New Oxford-street, W.C.
Ju-Jitsu: What it really is. The First Complete and Authentic Description of the Japanese Method of Self-defence written out of Japan. By (Wm. Bankier) "Apollo." Price not stated.

P. BLAKISTON'S SON AND CO., 1012, Walnut-street, Philadelphia.
A Manual of Fever Nursing. By Reynold Webb Wilcox, M.A., M.D., LL.D., Professor of Medicine in the New York Post-graduate Medical School and Hospital. Price 4s. 6d. net.

PENTLAND, YOUNG, J., Edinburgh and London.
The Edinburgh Medical Journal. Edited by G. A. Gibson, M.D., F.R.C.P. Ed., and Alexis Thomson, M.D., F.R.C.S. Ed. New Series. Vol. XVI. Price not stated.

REES, HUGH, LIMITED, 124, Pall Mall, S.W.
The Crusade against Phthisis. By A. B. de Guerville. Price 6d. net.

SANITARY PUBLISHING CO., LIMITED, 5, Fetter-lane, E.C.
Simple Methods of Testing Sewage Effluents. For Works Managers, Surveyors, &c. By George Thudichum, F.I.C., Author of "The Bacterial Treatment of Sewage," &c. Price 2s. 6d. net.
The Sewage Problem: A Review of the Evidence collected by the Royal Commission on Sewage Disposal. By Arthur J. Martin, Assoc.M.Inst.C.E., M.R.San.I. Price 8s. 6d. net.
Sanitary Law and Practice. A Handbook for Students. By W. Robertson, M.D. Glas., D.P.H., Medical Officer of Health, Leith; and Charles Porter, M.D., B.Sc. (Public Health), M.R.C.P. Edin., Member, Honourable Society of the Middle Temple; Lecturer on Bacteriology, University College, Sheffield; Deputy and Assistant Medical Officer of Health, City of Sheffield. Price 10s. 6d. net.

SAUNDERS, W. B., AND COMPANY, 9, Henrietta-street, Covent Garden, W.C.
Atlas and Epitome of General Pathologic Histology. By Docent Dr. Hermann Dürck of the Pathologic Institute, Munich. Authorised translation from the German. Edited by Ludvig Hektoen, M.D., Professor of Pathology in Rush Medical College, Chicago. Price 21s. net.

SWAN SONNENSCHEIN AND CO., LIMITED, 25, High-street, Bloomsbury, W.C.
The Public Schools Year Book. With a Select List of Preparatory Schools. Sixteenth Year of Publication. 1905. Founded by Three Public School Men: Eton, Harrow, Winchester. Price 2s. 6d.
The Schoolmasters' Yearbook and Directory, 1905. A Reference Book of Secondary Education in England and Wales, including Part I., General Information; Part II., Alphabetical Lists of Secondary Schoolmasters and Schools. Third Annual Issue. Price 5s. net.
Premature Burial and How it May be Prevented. With Special Reference to Trance, Catalepsy, and Other Forms of Suspended Animation. By William Tebb, F.R.G.S., Corresponding Member

of the Royal Academy of Medical Sciences, Palermo; and Col. Edward Perry Vollum, M.D., late Medical Inspector, U.S. Army. Second edition, by Walter R. Hadwen, M.D., L.R.C.P. Lond., M.R.C.S. Eng., L.S.A. Lond. Price 6s. net.

WRIGHT, JOHN, AND CO., Bristol. (SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.)

Meals Medicinal: with "Herbal Simples" (of Edible Parts). Curative Foods from the Cook; in place of Drugs from the Chemist. By W. T. Fernie, M.D., Author of "Herbal Simples," "Animal Simples," "Kitchen Physic," &c. Price 9s.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BALLANTYNE, THOMAS, M.B., Ch.B. Glasg., has been appointed Senior House Surgeon at the Blackburn and East Lancashire Infirmary.

BENNETT, J. M., L.R.C.P.I., L.S.A., has been appointed Certifying Surgeon under the Factory Act for the Ruddington District of the county of Nottingham.

CLAPP, GEORGE TUCKER, M.B. Cantab., M.R.C.S., has been appointed Medical Officer to the Exeter Post-office Staff.

COOPER, C. T., M.B. Melb., has been appointed Medical Officer and Public Vaccinator, New Glenelly, South Australia.

CORYER, EDRED M., M.B. Camb., F.R.C.S., has been appointed Consulting Surgeon to the Bowes Park Cottage Hospital.

COWIE, J. A., B.A., B.Sc. N.Z., M.B., Ch.B. Glasg., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Assistant House Surgeon to the Royal Devon and Exeter Hospital.

GRIBBLE, J. R., L.R.C.P., L.R.C.S., L.F.P.S. Glasg., has been appointed Medical Officer for Port Wakefield, South Australia.

LEES, HAROLD C., M.R.C.S., L.R.C.P. Lond., M.B., B.S. Lond., has been appointed Junior House Surgeon at the Blackburn and East Lancashire Infirmary.

MACKENZIE, H. VALENTINE, M.D., C.M. Edin., has been appointed Honorary Ophthalmic Surgeon to the Moretonhampstead (Devon) Cottage Hospital.

MARTIN, JAMES, L.R.C.P. & S. Edin., has been appointed a Public Vaccinator for the District of Middlemarch, New Zealand.

PATERSON, ALEXANDER, M.D., Ch.M. Edin., has been appointed Public Vaccinator for the District of Christchurch, New Zealand.

POWELL, H. A., M.B., Ch.B., has been appointed Medical Officer to the Kadina Corporation and Wallaroo Mines, South Australia.

SOUTER, J. F., M.B., Ch.M. Aberd., has been appointed Medical Officer at East Torrens, South Australia.

WATERFIELD, N. E. M.B., B.S. Lond., F.R.C.S. Eng., has been appointed an Inspector (supernumerary) under the Sudan Government.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ARMY MEDICAL SERVICE, 68, Victoria-street, London, S.W.—Examination of candidates for not less than 25 commissions in the Royal Army Medical Corps.

ASHTON-UNDER-LYNE, DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Resident House Surgeon. Salary £120 per annum, with board, washing, and lodging.

BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £100 per annum, with apartments, board, and attendance.

BOWDON, CHESHIRE, MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Resident Medical Officer. Salary £100 per annum, with board apartments, and washing.

CAMBERWELL, BRUNSWICK-SQUARE INFIRMARY.—Assistant Medical Officer. Salary £110 per annum, increasing to £120, with apartments, board, and washing.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C. House Surgeon, non-resident. Honorarium at rate of 40 guineas a year. Also Honorary Second Assistant Anæsthetist.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Anæsthetist. Also Clinical Assistant for three months.

CHESTER GENERAL INFIRMARY.—House Surgeon. Salary £100 per annum, with residence and maintenance.

COUNTY ASYLUM, Rainhill, near Liverpool.—Assistant Medical Officer, unmarried. Salary £150 per annum, increasing to £350, with apartments, board, attendance, and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Assistant House Surgeon. Salary £60 per annum, with rooms, board, washing, and attendance.

DERBY, DERBYSHIRE HOSPITAL FOR WOMEN.—Honorary Surgeon.

DUDLEY DISPENSARY.—Resident Medical Officer. Salary £150, with house, coal, gas, and water.

FARRINGDON DISPENSARY AND GENERAL LYING-IN CHARITY, 17, Bartlett's Buildings, Holborn-circus, E.C.—Honorary Dental Surgeon.

FRENCH HOSPITAL AND DISPENSARY, 172, Shaftesbury-avenue, W.C.—Assistant Resident Medical Officer, unmarried. Honorarium £40, with full board.

GROCERS' COMPANY'S SCHOLARSHIPS.—Two Scholarships for Sanitary Science, value £300 a year, with allowance, tenable for two years.

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Senior Assistant Medical Officer, unmarried. Salary £300 a year, with board, lodging, washing, and attendance.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Assistant Physician.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM.—Resident Medical Officer for six months. Salary at rate of £50 a year, with board and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Assistant Physician. Also Assistant Casualty Medical Officer, unmarried, for six months. Salary £20, with board and residence.

HUDDERSFIELD INFIRMARY.—One Physician, Two Surgeons, and One Ophthalmic and Aural Surgeon (all honorary).

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Senior House Surgeon. Salary £100 per annum, with residence, board, and washing.

JAFFRAY BRANCH OF THE GENERAL HOSPITAL, Gravelly-hill, near Birmingham.—Resident Medical and Surgical Officer. Salary £150 per annum, with board, residence, and washing.

LIVERPOOL DISPENSARIES.—Head Surgeon, unmarried. Salary £200 per annum, with board and apartments.

MANCHESTER, CHORLTON-UPON-MEDLOCK DISPENSARY.—Honorary Medical Officer.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Grafton-street, Fitzroy-square, W.—Anæsthetist.

MONMOUTHSHIRE ASYLUM.—Junior Assistant Medical Officer. Salary £150 per annum, with board, lodging, and washing.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary £160.

NEW HOSPITAL FOR WOMEN.—Clinical Assistants (female). Also Assistant Anæsthetist.

NEW ZEALAND, UNIVERSITY OF OTAGO.—Professor of Physiology. Salary £600, with half of class fees.

RANGOON, DUFFERIN MATERNITY HOSPITAL.—Resident Lady Doctor as Superintendent. Salary Rs. 400, rising to Rs. 500, with house, partially furnished.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Two Members of the Court of Examiners.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Assistant Surgeon.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Clinical Assistants.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Surgeon; also Junior House Surgeon. Salaries £100 and £60 per annum respectively, with rooms, board, and washing.

TOTTENHAM HOSPITAL, London, N.—Honorary Assistant Physician. Also Pathologist. Honorarium 20 guineas per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite street, Chelsea, S.W.—House Surgeon for six months. Honorarium of £25, with board and lodging.

WANGFORD RURAL DISTRICT.—Medical Officer of Health. Salary at rate of £60 a year.

WINCHESTER, ROYAL HANTS COUNTY HOSPITAL.—Honorary Surgeon-in-Ordinary.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory Act at Wokingham, in the county of Berks; at Lynton, in the county of Devon; at Mitcheldean, in the county of Gloucester; and at Newport, in the county of Mayo.

Births, Marriages, and Deaths.

BIRTHS.

ARMOUR.—On Jan. 6th, at Harley-street, W., the wife of Donald John Armour, M.B., F.R.C.S., of a daughter.

GUNN.—On Jan. 6th, at Great Bolton-street, Blackburn, the wife of Albert A. Gunn, M.B., Ch.B. Edin., of a daughter.

MACLEOD.—On the 10th inst., at 11, Harley-street, Cavendish-square, the wife of J. M. H. MacLeod, M.D., M.R.C.P., of a daughter.

MARRIAGE.

MAXWELL—BAKER.—On Jan. 5th, at St. Stephen's, Bayswater, William Henry Maxwell, M.A., M.B. Camb., F.R.C.S. Eng., to Gladys Dyer, daughter of the late Herbert H. C. Baker of King William's Town, South Africa.

DEATHS

BELLIS.—On Jan. 4th, suddenly, at 1a, Portland-road, Notting Hill, London, W., Edward Bellis, L.R.C.P.I., L.R.C.S.I., aged 74, late of 81, Holland Park-avenue, W. Irish papers please copy.

BLACKETT.—On Jan. 5th, at Cambridge-street, W., Joseph Byron Blackett, M.R.C.S., aged 80 years.

BRAIDWOOD.—On Jan. 7th, at Henwick, Newbury, P. Murray Braidwood, M.D., F.R.C.S., only son of the late Rev. John Braidwood of Madras and Edinburgh, aged 63. No cards.

WILLIAMS.—On Jan. 9th, at Lansdown-place, Clifton, Bristol, Rubulus Williams, M.D., in his 74th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A PECULIAR FEATURE OF THE RECENT FOG.

To the Editors of THE LANCET.

SIRS,—*Re* "A Peculiar Feature of the Recent Fog" in THE LANCET of Jan. 7th, p. 43, I beg to state that during the last fog I observed the same feature in the flames of the gas stoves in our office in the City as well as in those of the kitchen gas stove in my residence in Balham. The Bunsen flames showed a most intense yellow colour, the intensity varying during the day. Therefore I do not consider that the phenomenon arose from any mechanical scattering of sodium salts but it seems more likely that the presence of small particles of sea-water caused it.

I may mention, as possibly bearing on this subject, that once I tried to ascertain the quantity of sea salt suspended in the air on the German Isle of Sylt. The air showed that distinct "smell and taste of sea salt" and the spectroscope proved distinctly the presence of sodium which turned the blue Bunsen flame into yellow, but my then very simple means of analysis failed entirely to prove the presence of weighable parts of NaCl.

I am, Sirs, yours faithfully,

Upper Thames-street, E.C., Jan. 7th, 1905. E. FERNER.

To the Editors of THE LANCET.

SIRS,—Might not the yellow colouration of the flames of the gas in your offices be due to the fact that during the fog there was frost and that many of the cleansing authorities in London used salt in the streets to break up the ice which had formed on the roads? The atmosphere must have been impregnated with saline particles which would later, when dissipated, be brought into contact with the flame.

I am, Sirs, yours faithfully,

Trafalgar-square, W.C., Jan. 7th, 1905. A. G. BATEMAN.

THE EFFECT OF SNUFF ON THE ACTION OF THE HEART.

To the Editors of THE LANCET.

SIRS,—Can any of your readers refer me to any literature on the above subject or give me any trustworthy information as to what (if any) action snuff has on the heart? I have a patient, aged 68 years, who is suffering from flatulent dyspepsia and threatened heart failure. He uses about one ounce of snuff weekly. Is this habit injurious and should the snuff be forbidden? Thanking you in anticipation,

I am, Sirs, yours faithfully,

Hull, Jan. 9th, 1905. JAS. SAVAGE, M.D. Aberd.

A REPUDIATION.

To the Editors of THE LANCET.

SIRS,—A portion of the daily press having copied the reports of some of my cases which were published in last month's issue of the *British Journal of Dermatology*, I should esteem it a favour if you would allow me to state it was done without my knowledge or consent.

I am, Sirs, yours faithfully,

Harley-street, W., Jan. 3rd, 1905. T. J. P. HABTIGAN.

ANTI-NICOTINE TOBACCO.

To the Editors of THE LANCET.

SIRS,—Can any of your readers inform me of an anti-nicotine tobacco and what firm manufactures it?

I am, Sirs, yours faithfully,

Jan. 9th, 1905. H. D.

**** We have no knowledge of an "anti-nicotine tobacco" for pipes or cigarettes but it is just possible that such an article is made. There are cigars on the market from which a large fraction of the nicotine has been extracted but we have no experience of their qualities.—ED. L.

TUBERCULO-ALBIN.

To the Editors of THE LANCET.

SIRS,—It may be of interest to you to know that at the request of a number of patients who wanted to test its value upon themselves I gave tuberculo-albin a fair trial in six cases over two years ago. In no case did it appear to produce any benefit and in some instances it appeared to aggravate the symptoms. I have unfortunately still a quantity of the material beside me which I bought at that time, as far as I can remember, at a cost of 10s. an ounce and except for the glass stoppers and the bottles themselves consider the possession valueless.

I am, Sirs, yours faithfully,

Jan. 2nd, 1905. D. L.

R. R. R.—The law is thus stated in Whitehead's "Church Law," second edition, at p. 179: "The duties of ministers and registrars are practically confined to enforcing the observance of the proper legal forms and ceremonies, but at the same time they are liable to punishment for performing the ceremony, knowing that the parties or one of them is either unable or unwilling to enter into the contract." An insane person cannot enter into the contract of marriage but it is not easy to imagine a case in which it could be proved that one of the parties was incapacitated at the time to the extent recognised by the law and that the clergyman or the registrar knew it. The exaction of any penalty, therefore, from the clergyman or the registrar must be extremely rare and we are not aware of any instance having occurred to which we can refer our correspondent. The difficulty of establishing the absence of intelligent consent to the contract of marriage was shown in the case of Scott *v.* Sebright and in that in which the Earl of Durham endeavoured to have his marriage pronounced void. Both these trials took place more or less recently and were reported at length in the newspapers.

Diet.—We do not possess the information which, we think, could only be obtained from the well-known manufacturers of various specialities.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (18th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (19th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (21st).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.). St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (17th).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Mr. W. C. C. Pakes and Mr. F. H. Joseph: A Note on the Use of Acid Media in the Isolation of B. Pestis.—Mr. F. H. Joseph: Fugent—a New Stain.—Mr. G. MacDonald: On the Development and Course of the Opsonins in Cases of Acute Lobar Pneumonia.—Dr. W. Bulloch: The Variations in the Opsonic Index in Cases of Tuberculosis.

MEDICO-LEGAL SOCIETY (Rooms of the Royal Asiatic Society, 22, Albemarle-street, W.).—8 P.M. Dr. J. G. Garson: A Case of Disputed Fracture of the Clavicle. Demonstration:—Dr. J. G. Garson: The Development of Invisible Finger-prints. Discussion on the Law relating to the Criminal Responsibility of the Insane (opened by Mr. A. D. Cowburn).

ROYAL STATISTICAL SOCIETY (9, Adelphi-terrace, Strand, W.C.).—5 P.M. Paper:—Dr. R. Dudfield: A Critical Examination of the Methods of Recording and Publishing Statistical Data bearing on Public Health, with Suggestions for the Improvement of such Methods.

WEDNESDAY (18th).—SOCIETY OF ARTS (John-street, Adelphi, W.C.).—8 P.M. Paper:—Capt. L. James: Wireless Telegraphy and War Correspondence.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (20, Hanover-square, W.).—5.30 P.M. Paper:—Dr. C. W. Buckley (Buxton): Climatology from a Medical Standpoint.

ROYAL METEOROLOGICAL SOCIETY (Institution of Civil Engineers, Great George-street, Westminster, S.W.).—7.30 P.M. Ordinary Meeting. 7.40 P.M. Annual General Meeting. Election of Officers and Council for the ensuing year. Address:—The President (Capt. D. Wilson-Barker): The Connexion of Meteorology with other Sciences.

FRIDAY (20th).—SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (11, Chandos-street, W.).—5.30 P.M. Cases and Specimens will be shown by Dr. W. H. Kelson, Dr. A. Morison, Dr. L. Guthrie, Mr. G. Pernet, Mr. F. Jaffrey, Mr. D. Armour, Dr. E. Pritchard, Dr. J. G. Emanuel, and Dr. G. Carpenter. Paper:—Mr. D. Drew: On a Case of Vesical, Ureteral, and Renal Calculus in a Child.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (16th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. T. C. Fox: Clinique. (Skin.) 5.15 P.M. Mr. B. G. A. Moynihan: The Surgery of Simple Ulcer of the Stomach and of its Complications.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. S. Taylor: Treatment of Various Diseases.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Mr. J. Cantlie: Beri-Beri.

TUESDAY (17th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. E. Squire: Clinique. (Medical.) 5.15 P.M. Mr. P. L. Mummery: The After-Treatment of Abdominal Operations.

POST-GRADUATE COLLEGE (London County Asylum, Claybury, Woodford Bridge, Essex).—3 P.M. Dr. R. Jones: Clinical Varieties of Insanity, with Demonstration in the Pathological Laboratory by the kindness of Dr. Mott (Director).

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—5 P.M. Prof. L. C. Miall: The Structure of Animals.

WEDNESDAY (18th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. G. L. Cheatle: Clinique. (Surgical.) 5.15 P.M. Dr. D. Grant: The Treatment, especially Intra-Nasal, of Suppuration in the Nasal Sinuses.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Beddard: Practical Medicine.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Demonstration:—Mr. Nourse: Nasal and Aural Accessory Sinuses.

THURSDAY (19th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Mr. J. Clarke: Recent Improvements in the Treatment of Painful and Deformed Feet.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. H. J. Davis: Diagnosis in Cardiac Murmurs.

CHARING CROSS HOSPITAL.—4 P.M. Mr. S. Boyd: Demonstration of Surgical Cases. (Post-Graduate Course.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture:—Mr. R. M. Corner: The Effects of Physical Exercise on the Chest in Children.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Dr. A. E. Giles: Uterine Displacements.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture: Sir William Broadbent: The Examination of the Heart and what may be learned from it. (Post-Graduate Course.)

FRIDAY (20th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. StClair Thomson: Clinique. (Throat.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. S. Taylor: Treatment of Various Diseases.

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—9 P.M. Prof. Sir James Dewar: New Low Temperature Phenomena.

EDITORIAL NOTICES.

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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We cannot prescribe or recommend practitioners.

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Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1904, which was completed with the issue of Dec. 31st, and the Title-page to the Volume, were given in THE LANCET of Jan. 7th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1904 are now ready. Bound in cloth, gilt lettered, price 1*s.* carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 12th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Jan. 6	29·63	W.	0·19	57	55	42	44	45	Raining
,, 7	30·06	N.W.	0·02	58	54	42	49	52	Cloudy
,, 8	30·29	W.	...	70	52	48	47	49	Cloudy
,, 9	29·91	S.W.	...	53	53	48	48	51	Cloudy
,, 10	30·47	N.W.	0·13	52	43	37	36	39	Cloudy
,, 11	30·22	S.W.	...	68	49	38	41	43	Fine
,, 12	30·06	N.W.	...	65	47	41	39	41	Fine

During the week marked copies of the following newspapers have been received:—*Bath Weekly Argus, Glasgow Evening Times, Leeds Mercury, Cork Constitution, Surrey Advertiser, Westminster Gazette, Sussex Daily News, Dublin Times, Birmingham Post, Notts Guardian, Dublin Express, Bradford Observer, Hereford Mercury, Sanitary Record, Local Government Chronicle, Mining Journal, The Scotsman, Highland News, St. Petersburg Medicinische Wochenschrift, Evening News, Morning Leader, Manchester Courier, &c.*

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